STATUS OF NOAA FLEET

HEARING

BEFORE THE

SUBCOMMITTEE ON OCEANOGRAPHY
AND THE GREAT LAKES

OF THE

COMMITTEE ON
MERCHANT MARINE AND FISHERIES
HOUSE OF REPRESENTATIVES

ONE HUNDRED FIRST CONGRESS

FIRST SESSION

ON

H.R. 897

A BILL TO AUTHORIZE EXPANSION AND UPDATING OF NOAA'S FLEET OF OCEANOGRAPHIC RESEARCH VESSELS

APRIL 27, 1989

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STATUS OF THE NOAA FLEET

THURSDAY, APRIL 27, 1989

House of Representatives,
Subcommittee on Oceanography and Great Lakes,
Committee on Merchant Marine and Fisheries,
Washington, DC.

The subcommittee met, pursuant to notice, at 10:08 a.m., in Room 1336, Longworth House Office Building, the Hon. Dennis M. Hertel (chairman of the subcommittee) presiding.

Members present: Representatives Hertel, Hughes, Brennan, Lowey and Goss.

Staff present: Ray O'Malley, Brian O'Malley, Bill Ashworth, Ed Welch, Tom Kitsos, Joan Bondareff, Larry Flick, Lisa Pittman, Sue Waldron, and Barbara Cavas.

Mr. Hertel. I will call the meeting to order.

OPENING STATEMENT OF HON. DENNIS M. HERTEL, A U.S. REPRESENTATIVE FROM MICHIGAN, AND CHAIRMAN, SUBCOMMITTEE ON OCEANOGRAPHY AND THE GREAT LAKES

Mr. Hertel. Good morning. The Subcommittee on Oceanography and the Great Lakes meets this morning to discuss the status of the NOAA oceanographic research fleet.

The current NOAA fleet consists of 23 vessels supporting programs in nautical charting, fisheries research, marine environmental base line assessments, coastal ocean circulation, porpoise surveys, and dozens of other programs related to ocean and atmospheric research.

Our subcommittee is concerned that all the vessels of the NOAA fleet are faced with block obsolescence due to age.

As of today, NOAA has failed to develop plans nor sought additional authority to acquire or lease new vessels. This contrasts unfavorably to both the Navy and the National Science Foundation which have active plans to replace their oceanographic research vessels, and have instituted new ship construction programs.

Instead of requesting adequate resources, NOAA has proposed to lay up ships, deactivate other ships, and reduce days at sea. There are many issues before us to be examined today. What is the current status of the NOAA fleet and its scientific instrumentation? What are the long-term consequences for NOAA and its scientific missions, if the fleet is not modernized? What are the near-term consequences if NOAA proceeds to lay up ships and reduce days at sea as proposed by the fiscal year 1990 budget?

What are the national security and economic consequences of weakened oceanographic capabilities of the NOAA fleet? In conjunction with this afternoon's subcommittee hearing on satellite oceanography, are these technologies which reduce the need for ocean platforms or reduce cost?

The United States is a maritime Nation, and, as such, we are dependent upon oceanography to help us constructively use the seas. I hope our witnesses will help guide us in allocating our resources to ensure our oceanographic work best serves the Nation.

I understand how difficult the economic and budgetary considerations have been during this decade, and the tough challenges and questions that you face.

On the other hand, the entire Nation looks to you in these areas, and in fact we must continue to be a leader for the world community as far as research and information.

At this time, I would like to turn to my colleague, Mr. Goss, for an opening statement.

OPENING STATEMENT OF HON. PORTER J. GOSS, A U.S. REPRESENTATIVE FROM FLORIDA

Mr. Goss. Mr. Chairman, thank you very much. I would like to request your permission to insert into the record statements of the Hon. James Saxton, the Hon. Robert W. Davis, and the Hon. Norman D. Shumway.

Mr. HERTEL. Without objection, they will be placed in the record.

Mr. Goss. Thank you very much. My purpose in being here is the same as yours. I wish to hear what the statement is and the testimony is, and then at that time I would like to be able to ask some questions and express some concerns that are particular to our area, but I think affect the Nation as a whole. Thank you.

[The statements of Representatives Saxton, Davis, and Shumway follow:]

STATEMENT OF HON. H. JAMES SAXTON, A U.S. REPRESENTATIVE FROM NEW JERSEY

Mr. Chairman, thank you for holding this hearing today and allowing me an opportunity to express my concerns about the status of the NOAA fleet and NOAA's budget proposal.

The year is 1989. Evidence shows that our climate maybe warming at an unprecedented rate. Our rainfall is becoming more and more acidic. Our atmospheric ozone is being depleted. There are incidents of unprecedented toxic algal blooms. There are incidents of massive marine mammal deaths.

Our oceans and atmosphere are changing. We need to understand what is happening, why it is happening, and what the effects may be. We need to increase and intensify our oceanographic and atmospheric research programs. We have an increased demand and will continue to have an increased demand for the support of NOAA's programs and therefore also for an adequate NOAA fleet.

It is not my opinion that laying up 6 of 23 ships, reducing 66 staff positions, and reducing days-at-sea for remaining vessels is going to meet our present needs let alone prepare for future needs.

Indeed, I noticed that 5 of the 6 ships proposed to be laid up conduct fisheries research. This would significantly reduce the total number of ships conducting fisheries research from 10 to 5. Of these 5 remaining ships, only one has a home port on the East Coast.

I am very concerned about the condition of the NOAA fleet and support its modernization and expansion in order to meet present and future research programs needs.

STATEMENT OF HON. ROBERT W. DAVIS, A U.S. REPRESENTATIVE FROM MICHIGAN

Mr. Chairman, last week we reported out a NOAA authorization bill which provides sufficient funds to keep all of NOAA's vessels afloat. Clearly, though, this is not enough. The studies conducted by several of our witnesses demonstrate the need for a comprehensive overhaul of NOAA research vessels. The current policy of shelving ships because the agency hasn't requested sufficient funds for adequate equipment or repairs is unacceptable.

This Committee and the Nation has charged NOAA—the primary ocean and coastal player in the Executive Branch—with serious responsibilities. NOAA is to ensure public safety by preparing accurate and timely nautical charts and aeronautical maps. NOAA has important duties to protect our coastal waters and their resources from further degradation. NOAA is conducting vital fisheries research to enhance a multibillion dollar industry. Unless NOAA had satisfactory tools—and these vessels are the heart of any research effort—these missions can go unmet.

Modernization of the NOAA fleet is an expensive endeavor, but perhaps we can find less costly alternatives to meet the same objectives—leasing, chartering, joint ventures. However, if new vessels are to be built for NOAA, they must be built in U.S. shipyards. These vessels are to support U.S. research programs, and it is only fair that the U.S. economy should benefit from the jobs created. In addition, our shipyards need to be kept in operation in the case of a national emergency. This is one point that I am adamant about.

Thank you, Mr. Chairman.

STATEMENT OF HON. NORMAN D. SHUMWAY, A U.S. REPRESENTATIVE FROM CALIFORNIA

Mr. Chairman, I am pleased that we are holding this hearing on the NOAA fleet. The issue is of clear importance to the Subcommittee; our NOAA fleet is a vital national resource which must be equal to the task of supporting our national need for oceanographic research. As a result, I think it is most appropriate that we are conducting this oversight hearing today in an effort to ensure that our national oceanographic research needs are being met. The last time we examined this issue was 1986, so I'm sure we will be presented with new information.

While at the present time our NOAA fleet appears to be adequately serving the oceanographic research community—both Federal and academic—it is also equally apparent that the vessels are getting, quite old in many instances, and, accordingly, we must plan for the future. As technology advances, so must our scientific endeavors; in this exciting and far-reaching field of oceanographic science, this advancement requires up-to-date platforms or vessels to accomplish what is largely becoming a "global" field. It is the Subcommittee's role today then to examine whether our needs will continue to be met as we move forward in the future.

Of course, as is the case in all Federal matters these days, our oceanographic fleet is being operated on a limited amount of Federal dollars. Budget constraints are hitting all sectors of the Federal Government and many worthwhile efforts are being postponed, stretched out, or even eliminated. While the overriding national need from a national security, national resource management, and economic development standpoint must ensure that the Federal oceanographic fleet's capabilities are never truly threatened, we must realize that future plans for vessel replacement and fleet expansion cost money, and the Federal Government does not appear to be in a position to bear all of the financial burden on its own. To the extent that replacement and expansion are truly needed, it will have to take place as a cooperative, joint effort with the private sector and academic institutions playing an increased role.

We have a most distinguished panel of witnesses, and their insight into these important matters is most appreciated.

Mr. HERTEL. Thank you, Mr. Goss.

We will proceed, now, with the panel, and we will take all of your testimony and have questions after.

First of all, we have Rear Admiral Francis Moran, Director, Office of NOAA Corps Operations. Secondly, we have Captain Gilbert Kraine, U.S. Coast Guard, Special Projects Manager, Advanced Technology, Incorporated.

Then we have Rear Admiral Edward Snyder, U.S. Navy, retired, Committee on Alternative Strategies for Obtaining Ship Services, National Research Council, National Academy of Sciences.

Then we have Mr. William D. Barbee, Executive Secretary, University-National Oceanographic Laboratory System, University of Washington, Seattle. We have John Ols, a representative from the General Accounting Office, and we have Rear Admiral Richard F. Pittenger, Oceanographer of the Navy.

So, first of all, we will start with Admiral Moran.

STATEMENTS OF A PANEL, INCLUDING REAR ADMIRAL FRANCIS D. MORAN, DIRECTOR, OFFICE OF NOAA CORPS OPERATIONS, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, U.S. DEPARTMENT OF COMMERCE; CAPTAIN GILBERT L. KRAINE, USCG (RET.), SPECIAL PROJECTS MANAGER, ADVANCED TECHNOLOGY, INCORPORATED, ARLINGTON, VIRGINIA; REAR ADMIRAL J. EDWARD SNYDER, U.S. NAVY (RET.), COMMITTEE ON ALTERNATIVE STRATEGIES FOR OBTAINING SHIP SERVICES, NATIONAL RESEARCH COUNCIL, NATIONAL ACADEMY OF SCIENCES, WASHINGTON, D.C.; REAR ADMIRAL RICHARD F. PITTENGER, OCEANOGRAPHER OF THE NAVY, WASHINGTON, D.C.; WILLIAM D. BARBEE, EXECUTIVE SECRETARY, UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM, UNIVERSITY OF WASHINGTON, SEATTLE, WASHINGTON; AND JOHN M. OLS, JR., DIRECTOR, HOUSING AND COMMUNITY DEVELOPMENT ISSUES, RESOURCES, COMMUNITY AND ECONOMIC DEVELOPMENT DIVISION, GENERAL ACCOUNTING OFFICE, WASHINGTON, D.C.

Admiral MORAN. Good morning, Mr. Chairman, and members of the subcommittee. I would like to read my testimony which in fact has been approved by NOAA, Commerce and OMB.

Mr. HERTEL. Sir, you are welcome to submit that for the record, and summarize, if you could.

Admiral MORAN. OK. In summary, we do in fact support H.R. 896, which would place NOAA vessels under the procurement and procedure policies of the Walsh-Healey Act. We have always supported the Walsh-Healey Act as far as repair of vessels go, and think that it is in fact appropriate for the NOAA vessels to be placed under this Act.

So we do in fact support 896, which hopefully does provide parity between contract procedures for construction and repair of U.S. Government vessels, Navy and NOAA.

The second bill, H.R. 897, would authorize NOAA to implement a 10-year program to modernize the NOAA fleet, including the upgrade and service-life extensions of 19 vessels.

It would also authorize the replacement of four vessels, the construction of seven additional vessels, and the acquisition of new scientific instrumentation. In addition, the bill would authorize NOAA to enter into multi-year contracts for the construction or purchase of vessels and equipment, and to enter into multi-year charter agreements for one of the new vessels.

The Administration opposes the enactment of H.R. 897. Mr. Chairman, we recognize that our ships are aging, and our equipment requires an increasing amount of effort to maintain.

We also recognize that for the foreseeable future NOAA programs will continue to require the high-quality ship support to which we have become accustomed.

Within our budget limitations, we are focusing our attention on maintaining the capability of the aging NOAA fleet, to continue to provide the high-quality ship support required by NOAA's oceanographic survey fisheries programs.

In 1987, as part of this effort, an extensive materiel condition assessment was conducted of all 23 ships in the fleet to determine their condition and to identify any significant problems that would prevent extending life beyond that normally expected of ships.

The results of that assessment, which Captain Kraine, a member of this panel, has provided to you, verify that our maintenance program in the past has resulted in a fleet which is generally in much better condition than commercial vessels of the same age, and that NOAA vessels will continue to provide service for at least the immediate future.

Within our current budget constraints, we are addressing those elements that we consider to be the highest priority, including critical maintenance items, some new instrumentation, and a limited upgrade program.

During the past few years we have increased the use of GPS on NOAA vessels, installed multibeam acoustical systems and acoustical Doppler current profilers. We have deployed several enhanced capability and scientific computers. We have installed satellite communications systems, the MRSAT [phonetic] primarily. These systems have been deployed in limited quantities. However, their use has served to make data collection and processing collections more efficient.

The upgrade program has addressed the most critical items required to keep vessels operational, such as main propulsion engines, shaft and reduction gear repairs, ship service generator overhauls, and oceanographic winch and crane replacement.

To date, the program has resulted in limited upgrade of eight ships. The ninth vessel to undergo upgrade work, the Malcolm Baldrige, formerly the Researcher, spent a significant amount of last year in the yard because of serious reduction gear and propeller shafting problems.

Mr. Chairman, as H.R. 897 is currently written, it authorizes NOAA to modernize 19 of our existing ships, and therefore does not give NOAA the flexibility to replace those vessels with new technology that may be less costly and more efficient.

One such technology is SWATH. We are in fact looking at SWATH. It may allow us—and I say "may allow us"—to make improvements in the efficiency of our operations. However, we must complete technology assessment, cost analysis, and tests to determine which of our missions may be compatible with the attributes of SWATH.

In addition, we need to explore ways to acquire vessel support without the burden of ship acquisition costs in a single year.

The multi-year contract provision of your bill is a step in the right direction; however, it does not give us the option to enter into long-term lease/purchase arrangements for ships.

The National Research Council's Marine Board recently recommended that NOAA acquire multi-year contract authority and actively pursue long-term charter vessels for selected missions.

Sir, the Administration is opposed to H.R. 897. The Administration's position and their opposition is based on the inflexibility NOAA would have to replace existing vessels with new or lower cost, more efficient ships.

In view of the current Federal budget deficit, it is our position that H.R. 897, with its $440 million price tag, is not the best option at this time.

Mr. Chairman, this concludes my statement and I will be glad to answer any questions that you or other members of the committee may have.

[The statement of Admiral Moran can be found at the end of the hearing.]

Mr. **Hertel**. Thank you, Admiral. Next, we will have Captain Gilbert Kraine.

STATEMENT OF CAPTAIN KRAINE

Captain **Kraine**. Mr. Chairman, I would like to submit my comments for the record and summarize.

Mr. **Hertel**. Thank you.

Captain **Kraine**. Advanced Technology was awarded a contract in 1987, as Admiral Moran has said, to inspect the vessels of the NOAA fleet and develop an upgrade plan. I was the program manager for that task. We visited and inspected each ship in the NOAA fleet with the exception of the Murre II.

During the course of the study, we used a team of engineers with expertise in machinery, electrical, electronic and structural disciplines. We developed a plan based on the current condition of the ships, to improve the ability of the ship to perform its mission, to extend the life of the ship, or to increase the ship's productivity or efficiency.

Our approach was to propose a repair or replacement depending on the condition of the equipment, and the mission criticality of the item. We developed an upgrade project for each ship consisting of a series of repair and replacement programs for that ship.

In regards to the study that we prepared, there were some caveats in the use of it. First, we were not charged to investigate the scientific equipment and instrumentation aboard the ship, only the spaces that housed the equipment.

Second, we were directed to assume that the operational requirements for the ship would continue in the future in the same role as in the past.

Third, we did not consider replacing any of the ships with an unconventional design such as a SWATH, but, rather, replacements designed with a conventional displacement hull. All of our dollar estimates were based in 1987 dollars.

We evaluated the NOAA fleet as being in better condition than comparable commercial vessels. We attributed a great deal of that to the many hard-working and dedicated people in NOAA who have been charged with the maintenance of the ships over the years.

The basic problem facing the fleet is the block obsolescence. In reviewing the fleet, we felt that many of the vessels could be upgraded with the exception of four which we recommended for decommissioning and replacement.

Those were the Albatross IV, the Townsend Cromwell, the John N. Cobb, and the Surveyor.

We developed a proposed schedule for the upgrade program over a period of 10 years that would balance the workload and the cost of the program. The upgrade program plan was developed to begin in fiscal year 1990. Of course there have been some departures from the plan in the intervening time.

These departures were a result of NOAA's incorporation of other requirements into the plan, and the requirements of day to day operations in the intervening time. As a result, the Advanced Technology plan is no longer completely current, and probably should be updated to reflect these changes before it gets too far out of date.

One last comment. In regard to the funding of the program, I feel that the projected savings of the use of SWATH vessels should be realized before we make the assumption that we can really achieve the savings that are inherent in that design. Thank you.

[The statement of Captain Kraine can be found at the end of the hearing.]

Mr. HERTEL. Thank you very much. Admiral Snyder.

STATEMENT OF ADMIRAL SNYDER

Admiral SNYDER. Good morning, Mr. Chairman, and members of the committee. My name is J. Edward Snyder, and I am here before you today as a member of the committee convened by the National Research Council, and also as a retired Oceanographer of the Navy.

It is a real privilege to be before the committee because the first time I ever testified before Congress was 26 years ago before this subcommittee, as a young commander for the Interagency Committee on Oceanography.

The NRC Committee on Alternative Strategies for Obtaining Ship Services, which completed its study a year ago, assessed the issues associated with obtaining research vessel support from the private sector versus operating NOAA ships.

Upon release of the report, the Chairman of that committee, William Gaither, testified before your subcommittee and presented his findings and recommendations of this study.

Despite the passing of a year since his testimony, and release of this report, the major findings and recommendations remain relevant today, particularly in light of your proposed bill, H.R. 897.

Our NRC committee warned that the Nation's need for oceanographic ships are expanding, while expenditures to modernize and renew the NOAA oceanographic fleet are not keeping pace.

The Ship Services Committee concluded that the NOAA fleet represents a significant and unique part of the national oceanographic fleet capability, and its future should be considered in the context of total national needs for oceanographic ships.

Furthermore, the NOAA fleet undoubtedly will play an important role in the Nation's expanding need to perform marine resource assessment and oceanographic research, particularly with continued exploration of the Exclusive Economic Zone.

The committee recommended that policy decisions concerning the future of the NOAA fleet should ensure that the capability to support national interest at sea is strengthened, not diminished.

In order to address the problem of obsolescence of existing vessels, and ensure new vessel construction in the 1990's, the committee recommended that NOAA conduct a comprehensive study to define the characteristics of an idealized fleet to meet its present and future needs.

The results of this study would serve as the basis for the replacement/modernization of the NOAA fleet and the implementation of a program for leasing ship services.

The committee proposed that NOAA accomplish fleet replacement modernization by either seeking funds for new vessel construction or by undertaking a program of vessel lease purchase.

I have been informed that within the last year NOAA has implemented an agency-wide continuing planning process for determining oceanographic ship requirements for the next 20 years.

However, in view of your opening remarks, Mr. Chairman—the reference to the NOAA plan and the nonexistence thereof—I would have to say that in my personal view, as ex-Oceanographer of the Navy, and naval deputy to the Secretary of Commerce, the plan is not truly agency-wide. It has just begun processing from the NOAA corps upwards, and to be viable or supportable, it must be somewhat different than—in my opinion, it must be somewhat different than I now see it proceeding.

The NRC Committee strongly recommended that NOAA establish agency policy and procedures to enter into long-term multiyear contracts for ship charter and related scientific services. Based on the experience of other vessel-operating organizations, the committee found that long-term charters were more cost-effective and attractive for many ship services than short-term charters.

Furthermore, the committee recommended that bathymetric surveying of the EEZ be an area in which NOAA should embark on an experimental program of long-term contracting.

Although the NRC and others have identified the emerging problems of obsolescence, no new funds have been appropriated for new ships or for modernizing the existing ones.

Furthermore, multi-year contracting has yet to be undertaken by NOAA as an option for obtaining vessel services. Your bill, H.R. 897, appears to address many of these issues and others discussed in the NRC study indicating that the study continues to be relevant and that many of its recommendations have yet to be implemented.

Mr. Chairman, this concludes my testimony and I certainly will attempt to answer any questions you or the committee might have, both in regard to my membership in the academy, and in my past experience as Oceanographer of the Navy. Thank you.

[The statement of Admiral Snyder can be found at the end of the hearing.]

Mr. **Hertel**. Thank you, Admiral. Mr. William Barbee.

STATEMENT OF MR. BARBEE

Mr. **Barbee**. Thank you, Mr. Chairman. I am William D. Barbee. I am executive secretary of the University-National Oceanographic Laboratory System.

I have headed that office since 1982, and, prior to that, I was for 32 years a commissioned officer in NOAA and predecessor agencies. I left on good terms, and so perhaps there is some bias in what I have to say.

Since I have turned in a statement here, I would like to merely emphasize a few points.

Mr. **Hertel**. Yes. We will submit your statement for the record and appreciate your emphasis. Thank you.

Mr. **Barbee**. First of all, I would like to say that my statement is in the context of two assertions that I would like to make. The first of those is that the United States has, at least since World War II, led the world in its oceanographic endeavor, and including oceanographic research.

And one essential to this effort has all along been an effective oceanographic fleet. That is certainly not the only element that has allowed this, but it is one. The second point that I would like to make is that the research opportunities, as we look forward into the—through the 1990's and into the 21st century, I think are astounding and magnificent.

We are going to be able to do things that we have never been able to do before in terms of global circulation and the flux of matter through the oceans, and indeed the geology and geophysics of the sea floor.

In order to take advantage of those opportunities we have to have the facilities to support that endeavor, and I maintain that a strong oceanographic fleet is one of the things that is just going to be needed.

The oceanographic fleet in the United States is almost totally supported by the Federal Government. It has always been that way, and it always will be. There are some private ships, but even they operate under Federal funds.

I have characterized the fleet as being in three parts. The first of these is that part that is engaged in research and other oceanographic programs concerned with national security. This is, if you will, Admiral Pittenger's fleet.

The second of these parts is that that is engaged in research and other activities in support of civil agency missions. The NOAA fleet is the largest of those parts.

And finally, there is a fleet in support of research for basic knowledge and to develop the applications for that knowledge. This research is largely conducted by academicians at various universities around the country, and the largest part of that fleet is the UNOLS fleet.

In about 1984, as plans for what has been known as global initiatives in oceanography were beginning to take shape, people began to see that we could tackle some of these problems such as world climate, and so forth. They had a very large oceanographic component. We found that we could do those. We found, at the same time, that we simply did not have the ships in the academic fleet to support that endeavor.

The largest ships that we had in the UNOLS fleet, at that time, simply could not do the work that was required. This, although we talk about sea-kindliness, we talk about a lot of individual elements that are necessary for our new ships—the plain hard fact was that with our current fleet, the facility, limited the research, rather than supporting it. So we began a concerted plan to see what kind of ships would be necessary for that.

We have, I believe, enjoyed outstanding success in that our two principal sponsors—the Navy through the Office of Naval Research, and the National Science Foundation—have funded a number of acquisitions.

If you will look on the very last page of my statement, you will see that we have made significant progress in fleet improvement.

The two ships that were the largest in our fleet are two ships owned by the Navy, the Melville and the Knorr, and a program has just begun, early this year, to completely modernize those two ships under ONR sponsorship, and that is with Navy money.

That will make those two ships virtually new units, and they will be capable of doing the things that we foresee in the future. The Thompson, which was a ship in our fleet, is being replaced right now by Agor-23, again with Navy funds, and through ONR sponsorship.

Conrad, another of our older ships, is being replaced by a ship called the Bernier. I believe it is going to be renamed after an eminent oceanographer in the U.S. And then there is a lease action by the National Science Foundation that will provide a research vessel with icebreaking capability, that will take care of many of our research requirements for the Antarctic.

At the same time—I am sure that you will hear more about it—well, we feel that the progress in providing an improved fleet for academic oceanography for basic research is well under way, and is being aggressively pursued.

I am sure that you will hear later, that the same kind of statement can be made for that part of the fleet that supports national security requirements. The other third of the fleet—and they are about one-third each—is that to support civil missions, and I do not think the program is as aggressive.

That completes the emphasis I would like to put on my statement and I will be happy to answer questions.

[The statement of Mr. Barbee can be found at the end of the hearing.]

Mr. **Hertel**. Thank you, Mr. Barbee. We have John Ols from the GAO.

STATEMENT OF MR. OLS

Mr. **Ols**. Mr. Chairman, I would like to request that my detailed statement be placed in the record, and I will just summarize the details now. I am pleased to be here today, at your request, to discuss our current work on NOAA's research fleet as it relates to H.R. 897, which authorizes NOAA to modernize its fleet, and to use multi-year chartering to obtain ship support.

I should note that we have not yet completed our work at the present time, and hope to finish in the next month or two.

To accomplish our work, we surveyed NOAA fleet users about the current condition of the fleet, its ability to meet current mission requirements, fleet upgrade and modernization needs to meet future mission requirements, and the possible impacts of technology on the need for fleet support.

We also discussed fleet support with program managers and reviewed pertinent documents assessing the condition of the fleet.

In summary, our work showed that although increasing research responsibilities have been assigned to NOAA, its fleet support of research has decreased over the past several years primarily because of budget constraints.

NOAA users, for the most part, are not satisfied with the allocated ship time to conduct research, or the capabilities of existing ships to carry out their current research activities.

Most users believe that upgrades of existing ships and equipment, as well as additional ships, are needed to carry out future research. NOAA has not developed a strategy to meet its future fleet support needs.

We believe, Mr. Chairman, that NOAA needs to develop a strategy for meeting future research needs for ship support. Accordingly, we support the objectives of H.R. 897 and its requirement that NOAA develop a detailed fleet modernization plan.

We also support the bill's authorization for NOAA to enter into multi-year contracting which will provide NOAA with the flexibility to experiment with this alternative way to meet future research needs.

I would like to briefly discuss the results of our fleet-users survey, and their views on the adequacy of fleet support, the effect such support has on NOAA's mission objectives, the need to upgrade vessels, and the effect that new technology might have on fleet support requirements.

From over 100 fleet users, we interviewed many who conducted research or led hydrographic surveys on NOAA's ships in 1987. This was the most current information at the time we started our review about a year ago.

We selected a judgmental sample of 41 scientists from the major NOAA program organizations that rely on ship support for their research, including the National Marine Fisheries Service, the National Ocean Service, and the Office of Ocean and Atmospheric Research.

The majority of the surveyed users said that NOAA's fleet support was less than adequate for one or more of their research programs. These included research to assess the status of fishery stocks, studies of the ocean's response to long-term changes in the atmosphere, and hydrographic surveys to produce nautical charts.

Users identified two major areas where fleet support was not adequate for their research. These were: NOAA did not provide a sufficient number of days at sea to enable them to carry out their research, and the users experienced problems with the vessel's equipment and capabilities that hindered their research.

We found that some fishery program scientists estimated that, as a group, they received about 50 percent of the ship time they needed to carry out their work, and 20 scientists said winches that are used to deploy and recover scientific instrumentation hindered their research efforts.

For example, one scientist said he lost $75,000 worth of equipment because a winch malfunctioned and his equipment was lost at sea.

However, most of the scientists who were dissatisfied with ship support said they were able to meet most or all of their research objectives. Because we were concerned that the scientists may design their research objectives to meet the limitations of the fleet itself, we asked them whether fleet limitations decreased their research effectiveness.

All the scientists, who were dissatisfied with fleet support, said their effectiveness in conducting research decreased because they were not able to collect the information in the amount and quality they needed.

NOAA fleet users, including those who were generally satisfied with the current level of fleet support, said that improvements are needed in ship instrumentation and the ships themselves.

Thirty-seven of the 41 scientists that we interviewed believe there is a need to upgrade the NOAA vessels. The most frequently cited shipboard needs were winches, scientific instrumentation, laboratories, and depth-sounding systems.

A majority of the scientists also said NOAA should build new ships to support future research activities.

Although most scientists said new computers, satellite systems or other technologies would help their future research, very few believe such technologies would reduce their need for ship time.

Some believe technology would improve their processing, and integration of data, but would not reduce the need for the ships to collect the data. Others said that improved technologies to collect that data would allow them to collect it and process more data, and increase the accuracy and reliability of their research efforts.

Finally, Mr. Chairman, the fleet users told us that a shortage in fleet support would affect NOAA's ability to meet future program responsibilities in fisheries, ocean research, mapping and charting.

That concludes my summary statement and I will be glad to answer questions you or members of the subcommittee might have.

[The statement of Mr. Ols can be found at the end of the hearing.]

Mr. HERTEL. Thank you very much, Mr. Ols. Let me read your title into the record. Director, Housing and Community Development Issues, Resources, Community and Economic Development Division.

And our last witness on the panel today is Admiral Pittenger.

STATEMENT OF ADMIRAL PITTENGER

Admiral PITTENGER. Good morning, Mr. Chairman, members of the committee. I am Admiral Dick Pittenger, Oceanographer of the

Navy, and I am pleased to be here today to discuss the status of the Navy's oceanographic fleet. I have with me Mr. Robert Winokur, my technical director.

In the interest of time, and with your permission, sir, I will summarize my remarks, and request that my written statement be submitted for the record in its entirety.

Mr. **Hertel**. Without objection, so ordered. Thank you.

Admiral **Pittenger**. In my job as Oceanographer of the Navy, I am responsible for setting the requirements and sponsoring the Navy's shipbuilding program. We do many other things besides that. I am also the Naval Deputy to the Administrator of NOAA, and have, since I have been in the job for eight months, participated in all of the NOAA corporate board meetings.

I am also a member of and currently the Chairman of the Federal Oceanographic Fleet Coordinating Council which has Office of Navy Research, the National Science Foundation, NOAA, U.S. Geologic Survey, UNOLS, and United States Coast Guard representation.

That Council coordinates the scheduling of the Federal oceanographic fleet. Here is the current schedule which is printed by one of my field activities. The Council, in 1984, conducted a study, of whichthere was a report of the Federal oceanographic fleet study, which rationalizes the requirement for the Federal oceanographic fleet.

My first task as the Chairman was to initiate a review of this study which we are in the process of doing at this time, and hope to complete by the fall.

Naval oceanography is a critical factor in naval warfare, and our job is to provide our operating forces with the detailed information on the ocean environment, a very tough and demanding environment, so that we can fight smart. As our weapon systems become more sophisticated, and particularly as the targets become harder to detect and track, such as the quiet submarines and Stealth aircraft, the need for better environmental data becomes more acute.

The story that I have to tell about our oceanographic fleet, the Navy's oceanographic fleet, is good news. In the early 1980's, the Navy took stock of its oceanographic fleet and saw block obsolescence, both of the ships and of the hardware, the mission equipment, on those ships.

In 1984, the Secretary of the Navy directed the development of a modernization and acquisition plan. That plan was conducted by my office. The principal worker in that effort was Mr. Bob Winokur, and the plan was taken to our leadership. It was approved and has currently been implemented, and is on track.

The first of these new construction ships authorized by the Congress in 1985 was delivered last month, and is a deep-ocean survey program ship named the U.S.N.S. Maury, and it was the first new construction oceanographic ship to be delivered to the Navy in 17 years.

Four more are under construction. We are modernizing the remaining ships with new equipment, particularly navigation, multibeam bathymetry equipment, and as we can afford it, over-the-side equipment.

As has been mentioned by a previous testifier, the two university ships are being modernized, and the President's budget that you have before you now has three more ships, two in 1990 and one in 1991. In the outyears, three more ships are planned.

This schedule is somewhat slower than had been previously planned, adjusted for the realities of budgets, and the availability of technology. Last year, you may recall, that the Assistant Secretary of the Navy for Shipbuilding and Logistics deferred the building of a large SWATH ship for oceanography until the technology could mature, and we are watching that technology very closely, and it seems to be doing well. We are probably a year, or so away, and will probably make a decision on the SWATH ship as we put together the next 1992 budget in the Navy.

Other details of the Navy's oceanographic program are contained in a handout made available to you and your staff. We have enjoyed superb congressional support for this vital effort and of course we hope for continued support for the current budget request.

Thank you very much, Mr. Chairman, for asking me to testify. We stand ready to assist and answer your questions

[The statement of Admiral Pittenger can be found at the end of the hearing.]

Mr. **Hertel**. Thank you very much, Admiral.

Let me begin by talking about the hypocrisy of our Government—people in the Congress, people in the Administration. You hear a lot of speeches about the fact that we need more scientists. The key to our competitive edge in the world will be research, now and into the future; that it is important that we train young people; that we attract the best young people. A lot of speeches about that, but very little action.

The President, in his address to the Congress, indicated the need for encouraging people to get into the sciences. He announced that we could have one scholarship per district in the House of Representatives to a student to go into science, but obviously that is only symbolic. Obviously that does not meet the needs of this Nation, or of developing science to the greatest extent.

On the other hand, the people of our country do believe that education is a priority, and they do believe that protecting the environment is a top priority.

They believe that not only in every major opinion poll, but they believe that in their conversations with us, and they expect that we are doing more than we are. When they find out how little we are doing, they are constantly amazed, whether it is at a town meeting, or a meeting with university people. Those that have occasion to see items in the budget, when they find out how little we are doing, they are greatly shocked.

I understand the difficulties that NOAA has had in its budget in this last decade, and I especially appreciate, by my own experience visiting laboratories and ships in the NOAA fleet, and talking with individual employees, how hard they work, and I think it is a tribute, as was pointed out, that some of these older ships have been maintained so well.

And let's have no doubts about it. It is not because there has been any extra money to maintain these ships. It is because the people involved have worked their heads off and their fingers to the bone.

So I deeply respect what the people in NOAA have done with so little in the way of resources.

Let me begin by asking Admiral Snyder a question.

You testified, first, 26 years ago in this area. In all this period, with all the difficulties facing our Nation, have you ever seen the situation so bad in regards to the NOAA fleet?

Admiral **Snyder**. The fleet in those days was called a Geodetic Survey fleet, but it is the same fleet. It has just changed names. In specific answer to your question I would say no, because all of the new ships that were built in the 1960's have not been replaced. I would have to agree with your comment. Now my answer to this question is based on my experience of 39 years in the Navy, and so forth, as opposed to my sitting on the academy committee, because that specific question was not addressed.

It is very clear, if you look at when the emphasis was started—and in the House of Representatives it was in fact started by your committee, Mr. Chairman, during the 1960's—that we see a slow build-up within budgetary constraints, and then we see a group of ships, both in the—if you will—in the Navy and in the NOAA corps, and to some extent in the universities, that sort of lay dormant in the sense of the planning process for long-term replacement.

Most of those I guess were—and I only guess this—were budgetary limitations, not the lack of desire on the part of the researchers to go to sea. However, I must concur with your remarks, that having visited and looked at the NOAA ships and talked to their people, that I am very proud, as a sailor, to see the way in which they have, by their own bootstraps, maintained these ships in the condition they are in.

But in overall simplification of your question, the NOAA fleet, as opposed to all of the national fleet, is probably in the lowest state of ability to take on increased responsibilities, that I have seen in 26 years.

Mr. **Hertel**. You have ably reviewed the work of the NRC committee. Do you have any ideas as to how to transmit the needs that we have to the public and to the Congress itself?

Admiral **Snyder**. That is conjecture, Mr. Chairman, and that is in your bailiwick far more than mine.

Mr. **Hertel**. I am just looking for help.

Admiral **Snyder**. I always have had ideas. All of my failures could be the size of the Library of Congress, and my successes probably in a two-page summary, but I do not think that is too unusual for Washington.

I think that the prospect that I see of the agencies getting back together again, talking with each other—the Oceanographer of the Navy, being Chairman of the Federal Oceanographic Coordinating Committee, the lack of friction at the working level—portends better for the future.

I would say that without your support, as the subcommittee Chairman, the House of Representatives would not progress towards any positive steps. That is an opinion, but I have watched that over the years. It is such a diversified group of people. It is more agencies than are even sitting at this table today, and it is not always in the agency itself's highest priority.

In many cases—in fact I would suspect in almost all of the cases it does not portend to be the number one or two priority in the agency's mind, background, or budget. I just can only say I wish you luck, and I am certainly willing to have discussions with your staff on things that have failed in the past, and things that might have succeeded, and thank you very much for the opportunity to be here, sir.

Mr. **Hertel**. Thank you. Admiral Moran, I mentioned in my opening statement that as of today, NOAA has failed to develop plans nor sought additional authority to acquire or lease new vessels. Is that still true?

Admiral **Moran**. Yes, sir. That is still true.

Mr. **Hertel**. You see, I understand your criticism of our approach to the extent that it is not perfect, and we certainly do not want to say that you cannot have any flexibility.

On the other hand, we want you to do something. What is being discussed now? Are they discussing taking some action?, since we can all agree on the problem of obsolescence with the fleet. You discussed some of it in your testimony as to the future, and as to what was being done with existing ships, but what about—if you could have your way, if money was not a problem, what would you suggest to this subcommittee to have the NOAA fleet do, to work up to its fullest capability that is assigned by this Congress?

Admiral **Moran**. Sir, all I can tell you is that in the 1990 budget—if you will look at the President's 1990 budget that is before you at the current time—we are laying up one additional vessel, and a further reduction of sea dates. We are still, as we understand it, meeting NOAA's first-priority missions with those reduced resources.

Mr. **Hertel**. Well, we have looked, obviously, at the Adminstration's 1990 budget, and it looks as though—since they want to reduce personnel, 66 staff positions, and we have already all agreed that the people are working as hard as they can—they are understaffed—they want to reduce days at sea on seven more ships. Obviously, Admiral, that means that less research will be done. Is that true?

Admiral **Moran**. That is correct, sir.

Mr. **Hertel**. In what areas will you cut back in as far as research?

Admiral **Moran**. The areas that would be cut back would be the lower-priority missions as NOAA defines their missions, and those definitions are made by the assistant administrators, conveyed to us. We operate the vessels for the program, sir. They make the determination as to what they have to support, and what we can in fact support, living within the President's budget, and we come forward with that.

Mr. **Hertel**. I know they have to make choices. Could they make those choices—would they have them finalized, if the President's budget went into effect—not in tiny detail, but overall, in 30 days? Could they have that for us so we could tell the Congress what would be cut?

Admiral **Moran**. I think we have that already, sir.

Mr. **Hertel.** We would like to ask for that so we could tell the Congress what issues are facing them before we proceed with the budget.

[The information of Admiral Moran can be found at the end of the hearing in NOAA's response to questions.]

Mr. **Hertel.** I think the agreed-upon version of the budget will be voted upon today in committee, and that the House will be acting in the next few weeks on the overall budget.

Mr. Goss, you have questions?

Mr. **Goss.** Thank you, Mr. Chairman. I do in fact have a few. I am probably somewhat puzzled by the conflict in the testimony, in the sense that the target has been clearly enunciated, I think the need has been established, and I am not quite sure what your statement, Admiral, is, about lower-priority missions—what those specifically are—and I really would like to follow up on that and find out what it means on the ground or on the sea, in terms of what is not going to happen with regard to those.

But I got the distinct impression that since we have got a targeted need that seems to fit comfortably, as one witness has stated, in the three areas, and they are probably all things that have pretty good constituency support, and are important to our Nation's economy or security, or sense of knowledge, in one degree or another—that we are getting a message here that says the Adminstration is either going to switch this capability out of NOAA, or going to reduce the capability.

And I would like to ask you, specifically, if that is a fair conclusion?

Admiral **Moran.** If you will go back for the past 8 years, basically, you will see that NOAA has in fact diminished the capability of the vessels to support NOAA missions, and that has been done because of budgetary constraints.

Mr. **Goss.** Well, I gathered from Admiral Pittenger's remarks that the Navy is going to do what the Navy has to do. Maybe I am a victim of too many Tom Clancy novels, but I gather that national security, with these new types of submarines, and hydrothermals, and all of that, it really is important to our national security, knowing what is going on down there, because "quiet" seems to be the name of the game.

And I cannot imagine the Navy is going to abandon that, so if NOAA's research is not adequate, I presume the Navy is going to pick that up.

So I will leave that part out, a little bit, and go to something a little more parochial, and that is, I understand in one of the reports I have here, that the Port of Miami is scheduled to be closed to save some millions of dollars, presumably which will be used to maintain ships that are presently on line.

Is that correct?

Admiral **Moran.** There is what we call the Southeast Support Center located in Miami at Dodge Island. We spend $282,000 in the current budget year for a lease of facilities down there to support the Malcolm Baldrige. It is our feeling that the Malcolm Baldrige supports research on the East Coast of the United States, and then also going down into the South Pacific, on EPOX, can be as effectively operated out of our main Port of Norfolk.

Mr. Goss. Well, I obviously applaud any cost efficiencies, but I am a little nervous about applauding too loudly because I think we have got some significant research missions down in that area. Right now, I am being told that the largest red tide in the history of recorded red tides is threatening the tourist coasts of Florida in the Tampa area, and the shellfish industry and the fishing industry, and all that goes with that, and as far as I know, our red tide understanding is very limited and we have got a long way to go on that.

Admiral Moran. I think you will hear this afternoon, probably Tom Pyke—I am not sure if it is in his testimony or not—who is our assistant administrator for satellites, may address some of the needs in the satellite oceanography field, that are in fact allowing us to identify red tides.

We have a laboratory at Beaufort, South Carolina that is in fact working on red tide activity, and did in fact identify the coming of two red tides last year. So research in this area is in fact continuing and will continue, even though should we move that ship's home port to Norfolk versus being in Miami.

Mr. Goss. Well, I am extremely glad to hear that because, as somebody who happens to live on the beach in Florida, I have a personal interest as well as other interests involved.

In your testimony you mentioned, I believe, the figure of a $440 million price tag that you all had assigned to H.R. 897. In the absence of 897, you suggest that there is a better option. What is the price tag on the better option?

Admiral Moran. That is a good question, sir. I think we should get together and work through our representative at Commerce and OMB, and come back to you possibly with an option, if that is in fact agreeable.

Mr. Goss. Well, with the Chairman's acquiescence to that, I certainly would like to have that information, and I would like to have it in the context of these lower priorities that are being sacrificed, if I may.

[The information of Admiral Moran can be found at the end of the hearing in NOAA's response to questions.]

Mr. Goss. Thank you, Mr. Chairman.

Mr. Hertel. Admiral Pittenger, what is your budget in this area this year, as for oceanographic research? What is your budget for fiscal year 1989?

Admiral Pittenger. For ship construction, sir?

Mr. Hertel. Yes.

Admiral Pittenger. There is $88 million in 1990, and I believe $35 million—$42 million in 1991 for new ship construction. If you take those dollars plus the previous buys we have spent, we will have spent about $400 million on the fleet.

Mr. Hertel. Are you being cut back, though, in 1990, from the projection that we had earlier?

Admiral Pittenger. There was a cutback in the original plan, but the money has not been cut back since it left Navy.

Mr. Hertel. Now Secretary Cheney told us this week that he was going to reduce some of the hurricane-gathering abilities that we have. Could you be specific on that.

Admiral PITTENGER. As I understand it—and Admiral Moran can probably answer this question better—that the East Coast WC-130 hurricane hunter fleet, which is currently operated out of Keesler Air Force Base in Mississippi, is not going to be funded. Isn't that correct? And that is a follow-on to the cutting out of the Air Force budget the WC-130s that operated in the Pacific, year before last.

Mr. HERTEL. And who then would collect that information that is so vital?

Admiral PITTENGER. Well, a lot of that data, it would be collected by satellites. NOAA has a special purpose aircraft that would collect some of it as well, and this is really a NOAA question.

Mr. HERTEL. Well, now it is, if you are passing the buck. Yes.

Admiral PITTENGER. I am trying to pass the buck because I am the deputy. I am answering the question, but I know that there was—this has been a longstanding issue. The Department of Defense agreed to the Air Force cutting out the Pacific fleet WC-130s which really support the typhoon, and Hawaii. Based on the fact that we were going to improve other weather observation systems, such as the satellites, specifically the Air Force's DMSP surveillance, or "weather birds," and also NOAA's.

I in fact went to the Joint Typhoon Warning Conference in Hawaii this year, and the progress out there is the fleet and the operators out there feel sort of good about it, and sort of bad.

I mean, there is no question, I think, if you talk to the director of the National Hurricane Center, that he will tell you that he feels a lot better having the hurricane hunters than not having them.

Mr. HERTEL. Thank you. I mean, we are talking about public safety. We are talking about the possibility of communications going out with the satellite. We are talking about a lot of possibilities, aren't we?

Admiral PITTENGER. Damage; yes, sir. Damage to property.

Mr. HERTEL. Well, then I have to turn to NOAA, and ask you, Admiral, do you have the capabilities to take up the slack, because of this cutback, to the fullest extent?

Admiral MORAN. Absolutely not. We have two aircraft that are currently dedicated to hurricane reconnaissance and for hurricane research. Those aircraft fly primarily when the storm is within 24 hours of landfall.

This is the most critical time for high-density data. We need the data at that time to determine the exact track, as best we can, the exact track of the storm, to see where it is coming into the coast, and to warn, effectively, so that we are not warning an entirely large area when we do not need to. It costs money to move people around, as you are well aware, and your coastal areas, especially——

Mr. HERTEL. You do not have a budget for doing that. You do not have the money in the budget for doing the kind of—even with your existing equipment, the kind of——

Admiral MORAN. We do not. As I understand it, sir, there is a letter going from the Secretary of Commerce to the Secretary of Defense asking him to continue this service, and I suspect that letter will go down to the Secretary. NOAA has stated that they do in fact need this. I think one of your colleagues—Mr. Lewis—had a hearing down in West Palm Beach not long ago, where he had the director of the National Hurricane Center, Bob Sheets, Dr. Sheets, and others, testify that the only way he could still make the accurate forecast and attain the accuracy that he has got today is through aircraft penetrations of hurricanes.

Like I said, we have got the two aircraft. There is approximately 1600 hours a year that is flown in support of hurricane reconnaissance, that is a 10-year average that runs, and that is in the Defense Department.

NOAA expends between 200 and 300 hours in addition to that. So those are the basic numbers we are working with.

Mr. HERTEL. Thank you, Admiral. Now, Admiral Pittenger, could you, or the other admiral with you, tell us how much would the Navy be saving by closing down this operation?

Admiral PITTENGER. Sir, these aircraft are operated by the Air Force.

Mr. HERTEL. I am sorry. How much would they be——

Admiral PITTENGER. I will have to get it. I do not have that information.

Mr. HERTEL. That is a hard question.

Admiral MORAN. The figure that has been used in previous discussions is $25 million to $30 million.

Mr. HERTEL. Well, when Mr. Cheney surprised the Armed Services Committee the other day, in his first appearance on the Hill by—he had the big-ticket items he was cutting back, and then he mentioned this one. We were surprised. The members of both parties on the committee raised concerns about it, although they were not able to delve into it that day.

I think Mr. Goss and I will be looking into this to the fullest extent that we can.

I am sorry. Mr. Hughes from New Jersey. Do you have questions?

Mr. HUGHES. I thank the gentleman for recognizing me. I congratulate him on convening the hearing, and welcome the panelists.

Reading over some of the statements, and listening to some of the testimony, I take it there is quite a bit of consensus that NOAA's fleet is facing block obsolescence, and four of the vessels should be retired completely from the fleet and replaced.

Does NOAA accept that?

Admiral MORAN. We accept the fact that our vessels are in fact placing ourself in a position of block obsolescence. They were all built about the same time. They are all going to expire about the same time.

As I have stated before, what NOAA is doing with the resources that are available is maintaining our ships in the best-possible condition and servicing our highest-priority program, sir.

Mr. HUGHES. As a matter of fact, Captain Kraine clearly indicates that while NOAA has done a pretty good job of attempting to extend the life of these vessels, that the fact of the matter is that the vessels are just obsolete, and they are just not——

Admiral MORAN. I do not think our vessels are obsolete by any stretch of the imagination. There are four that are subject—that should be in fact retired, and we are working, and we have taken two of those out of service this year. You have a reprogramming notice that has come up to do that. But to say that the vessels, or the equipment itself is obsolete is not real.

We have equipment that is of a earlier vintage than we would like to have. But the equipment we have and the people we have are doing the job as best we can do it with what we have.

Mr. **Hughes**. So you do not totally accept the suggestion that the fleet is, in fact, facing block obsolescence?

Admiral **Moran**. We do accept the fact the fleet is in fact facing block obsolescence. We are doing our best to stretch out the life of the vessels that we have with the available resources that we have.

Mr. **Hughes**. I do not think Mr. Kraine looked at the equipment on board the vessels, in so far as their relevance. What is the situation with regard to much of the equipment?

Has that been upgraded, or is that also, likewise, rather——

Admiral **Moran**. If you have a 25-year-old vessel, you usually have 25-year-old propulsion, piping, valves, machinery, that was built when that vessel became available. Now to maintain——

Mr. **Hughes**. How about the research equipment?

Admiral **Moran**. The research equipment, in certain instances has been upgraded, in certain instances is still old.

Mr. **Hughes**. Do you have any idea what proportion of the some 23 ships have seen substantial retrofitting with any of the equipment that is used for research?

Admiral **Moran**. If we look at the Malcolm Baldrige which just came out of the yard last year, we have gone into an extensive upgrade of the computer system on the Malcolm Baldrige. It now has a mini VAX [phonetic]. That equipment was in fact purchased with our assistance, purchased primarily by the Atlantic Meterological Laboratory in Miami.

We are working as best we can with the programs to define what they need, and to put it on the vessels. We are doing that as funds become available.

Mr. **Hughes**. You are not suggesting that it is sufficient, however, for you to perform your mission effectively?

Admiral **Moran**. It depends on how you define "effectively," sir. Like I said——

Mr. **Hughes**. Well, I do not know how in the world you can continue to in fact become——

Admiral **Moran**. All right. Let me explain how NOAA works.

Mr. **Hughes**. Let me just finish my question and then you can answer. I do not know how you can suggest that you can be totally relevant to the problems that you are to address if you do not have equipment that is relevant to the times.

Admiral **Moran**. All right. Let me explain how NOAA works, which I am sure most of you are aware. There are five assistant administrators that sit on a ship allocation council. We take the amount of money that is appropriated by Congress and we go to that ship allocation council, and we allocate according to the programs that are their highest priorities.

Those are the priorities established by those individuals within NOAA. They know the condition of the ships; they know what we have to work with. Then that comes up to the assistant secretary who is Kent Burton. He approves it or disapproves it, with the concurrence of those five assistant administrators.

The NOAA vessels serve as a platform to support the scientific and the mapping requirements of the agency.

Those folks determine what those are. We put up what is necessary to do the ships. We start our budget process up through them. The budget process has to go from us up to, through the assistant administrators to the budget group. At that point in time is when the hard decisions are made. We do not make those decisions.

We sit down there and tell them what we need to operate the vessels. What comes out the other end is what we operate with, sir.

Mr. HUGHES. I always thought the hard decisions were made over at OMB. Has it changed?

Admiral MORAN. I do not think it has changed.

Mr. HUGHES. What can you tell me about the contracting out to the private sector? I realize that we are talking more generically today, but, frankly, if NOAA is, you know, unable to perform many of the missions because of the fiscal constraints that are imposed upon NOAA—and it is not only NOAA that is suffering from an aging fleet. We only have to look at our merchant marine fleet and our Coast Guard fleet. We are strained all the way across the board.

But part of the work that is being done is contracted out. For instance, I know that the National Undersea Research program is one program that looks at pollution, which concerns us on the East Coast, something NOAA has a very significant responsibility for, to try to determine whether dumping sewage, sludge, and industrial waste in the ocean is really destroying our fisheries, and what impact it is having upon our marine environment generally.

And yet I understand that we have cut that particular program back.

Admiral MORAN. The NURP program is one that has the underwater portion of it. Basically that is a grant program that is operated down out of St. Croix and through selected colleges and universities. The pollution program that you are addressing there on the East Coast is primarily by status and trends, and that has not—we still are providing ship support to——

Mr. HUGHES. Well, as I understand, the NURP program, operates out of the University of Connecticut—Fairleigh-Dickinson, the West Coast by contract, on the Gulf, off of North Carolina, and other places on the East Coast. And there is a very important program, which has been conducted at the 106-mile site where we have increasing dumping activity.

Now I understand that there has been a request to re-program some $7 million away from that program. Am I in error on that?

Admiral MORAN. I think so, sir. The NURP program itself—I am not sure, and I may speak out of turn, so I would like to get you an answer for that—but I do not think that they are involved with the 106-mile dump site.

Mr. HUGHES. Well, I just talked with some of the folks, as a matter of fact, that are connected with the program, and they conducted research last summer, and they contemplate conducting research this summer. I received this information as late as Wednesday or Tuesday of this week.

Admiral MORAN. I may be in error. We will find out and get back to you.

Mr. **Hughes**. My question is that if we do not have the capacity to do it in-house because we are being constrained—just following up on what my colleague, Mr. Goss, was saying—if we cut back our research in the private sector, are we saying that we are abandoning, really, the missions that have been traditionally, of NOAA for many, many years? Because that is where we are heading. Now I see your testimony. You are opposed to H.R. 897, and I understand that, but I do not really understand what is the plan, then, to deal with the problem.

Because if we cut back on our contracting out in the private sector for research, and we permit our vessels to suffer from block obsolescence so we cannot perform the mission, are we suggesting that there is no mission for the Federal Government to perform in this area?

Admiral **Moran**. I do not think so. I think there is an adequate mission and an important mission for the Federal Government to play in research.

Mr. **Hughes**. What is the plan to try to deal with the problem? You are facing the same problem, as I previously indicated in other agencies. Is there a game plan to try to deal with the block obsolescence?

Admiral **Moran**. At this point in time there is not, sir.

Mr. **Hughes**. There is not. All right. I thank the gentleman.

Mr. **Hertel**. Well, really, after listening to your questions, Mr. Hughes, I wonder if we could ask NOAA to, within a few weeks, give us some plan between opposition to 897 and zero in the next few weeks. If there is something in the middle that we could talk about with you—we will see the budget figures this evening, tomorrow—but if you could, within two weeks, have the Secretary, at our request, come back with some realistic plans that we could talk about, that would be very helpful.

Mr. **Hughes**. Mr. Chairman?

Mr. **Hertel**. Yes?

Mr. **Hughes**. The admiral indicated that he would furnish some more information on the NURP program.

If you would do that I would appreciate that because that is going to become increasingly important, and I would be concerned if there is a suggestion that we re-program $7 million, which I understand has been proposed.

Admiral **Moran**. I understand also that there is a Coast Guard tax that will be going on dumping out there that we are supposed to in fact get a portion of to do research in the 106-mile dump site.

Mr. **Hughes**. Well, the NURP program is a very cost-effective program, and it is crucial at a time when we are increasing the dumping, particularly off the East Coast. It is an important component.

Admiral **Moran**. Sir, the NURP program, as you know, has been one of the lower priorities of NOAA for the last few years, and I suspect that it will continue to be so in the foreseeable future. But we can get you all of the documentation on that that——

Mr. **Hughes**. I thank you.

Mr. **Hertel**. The subcommittee is also, I think, overall, interested in that. We would like to work with Mr. Hughes on that question of priority.

Congresswoman Lowey.

Mrs. **Lowey**. Thank you, Mr. Chairman, and thank you for your testimony. I am sorry that I was late, and tied up in another meeting. Mr. Ols, I have a question for you. Will you be able to put a price tag on your recommendations for new equipment when you finish your report? And in other words, can you tell us how much money is actually needed to enable NOAA to carry out the recommendation of yours and the Ad Tech studies?

Mr. **Ols**. Unfortunately, that was not part of our scope. We did not try to come up with an estimate. But I know that Ad Tech—they came up with a figure of $168 million. The Admiral has referred to a figure of $300 million, or $440 million. There are some other figures that are floating around at $330 million.

One of the things that we think has to be in the modernization plan is what is that cost going to be when we replace these ships? And at the same time consider the alternatives of chartering out, or some other alternatives besides just total replacement, especially in today's tight budget times.

Mrs. **Lowey**. Thank you, and I hope I am not duplicating another question that was asked previously, but I was particularly concerned if you have any concerns for the safety of the crew, and NOAA scientists, if the ships are not upgraded and not replaced?

Mr. **Ols**. Again, I will repeat the same thing I said, that we did not look into that. But one thing I will mention is the Ad Tech study pointed out there are safety problems, one of those being fire safety systems, and not all NOAA vessels are up to Federal code. I think there are many vessels—around 50 percent are—and the Admiral could correct me if I am wrong—but I think 50 percent are not up to Federal code, which could cause safety problems, and considering the age of the vessels, and where we are going in the 1990's, safety features could continue to happen as the vessels get older.

Admiral **Moran**. I would like to see anything that says those vessels are not up to safety standards. I have seen nothing on it. We have a vigorous fleet inspection program that is conducted on each vessel each year, and I do not believe that exists.

Mrs. **Lowey**. Well, we look forward to the completion of the report. Thank you.

Mr. **Hertel**. We are glad that is the answer, Admiral, but it is the kind of thing the committee is very concerned about, and I thank the congresswoman asking in that area, so we have that on the record.

Admiral **Moran**. Sir, I have to send those people out there. They are not going out to sea in unsafe vessels. You can bet your butt on that.

Mr. **Hertel**. We appreciate that very, very much.

Mrs. **Lowey**. Thank you, Mr. Chairman.

Mr. **Hertel**. The Chair would like to announce that we will, at Mr. Goss's request, be having a hearing on the hurricane warning issue, and we would like you to help us, Admiral. We will contact the Air Force and all interested parties. Obviously everyone living on the East Coast is very concerned about that surprise cutback.

If there are no other questions from the committee, we will submit further questions for the record, and thank all of you for coming this morning and being so candid.

As I said at the outset, after your testimony, if our Nation is going to be so concerned about science, and therefore the need for scientists and research, and protecting the environment, then the least we can do is give the adequate tools to those people that are doing the work out in the field, that we all depend on so much.

So we thank you very much for all the information you have given us today. The meeting is adjourned.

[Whereupon, at 11:23 a.m., the subcommittee was adjourned, subject to the call of the Chair.]

[The following was submitted for the record.]

I

101st CONGRESS
1st Session

H. R. 897

Authorizing the National Oceanic and Atmospheric Administration to modernize and expand its fleet of ocean research vessels, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

February 7, 1989

Mr. Jones of North Carolina (for himself, Mr. Davis, Mr. Brooks, Mr. Fascell, Mr. Studds, Mrs. Boggs, Mr. Hughes, Mr. Lent, Mr. Yatron, Mr. Akaka, Mr. Hutto, Mr. Tauzin, Mr. Bennett, Ms. Schneider, Mrs. Boxer, Mr. Bateman, Mr. Manton, Mr. Pickett, Mr. Clement, Mrs. Saiki, and Mr. Pallone) introduced the following bill; which was referred to the Committee on Merchant Marine and Fisheries

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A BILL

Authorizing the National Oceanic and Atmospheric Administration to modernize and expand its fleet of ocean research vessels, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "National Oceanic and Atmospheric Administration Fleet Modernization Act of 1989".

SEC. 2. FINDINGS.

The Congress finds that—

(1) the vessels of the National Oceanic and Atmospheric Administration (hereafter in this Act referred to as "NOAA") support important fisheries, oceanographic, mapping and surveying, and meteorological programs and projects;

(2) the NOAA fleet represents approximately one-third of the total Federal ocean research fleet;

(3) the average age of the vessels in the NOAA fleet is 24 years, which is nearly the average industry-accepted service life for vessels;

(4) a recent engineering study of the NOAA fleet, based solely on its current usage, has concluded that four vessels of the fleet need to be replaced and the remaining vessels need to be modernized;

(5) NOAA has new responsibilities for surveying and mapping the Exclusive Economic Zone of the United States and its offshore territories and possessions, for monitoring global climate change, and for fisheries research, that require the addition of seven new vessels to the fleet;

(6) NOAA's overall responsibilities require a 30-vessel fleet;

(7) recent advances in technology have led to the development of modern scientific equipment for re-

search vessels which would enable NOAA to perform its functions more efficiently; and

(8) unless NOAA implements a modernization and replacement program at this time, NOAA's ability to carry out its assigned missions will be significantly impaired, and a more expensive total fleet replacement program will be required later.

SEC. 3. PURPOSES.

The purposes of this Act are—

(1) to direct NOAA to implement a fleet modernization and expansion program over a 10-year period;

(2) to authorize NOAA to acquire modern scientific instrumentation for its fleet;

(3) to authorize NOAA to increase its personnel to the extent necessary to develop specifications for, and provide for the construction, leasing, or other acquisition of, the improved and expanded NOAA fleet;

(4) to authorize NOAA to enter into multiyear contracts for the construction, leasing, or other acquisition of vessels;

(5) to direct NOAA to modernize and construct its vessels under this Act in private shipyards in the United States; and

(6) to authorize appropriations necessary to carry out this Act over a 10-year period.

SEC. 4. FLEET MODERNIZATION AND EXPANSION.

(a) IN GENERAL.—NOAA shall develop a fleet modernization and expansion program, and implement that program over a 10-year period beginning in fiscal year 1990. Such program shall include—

(1) the modernization of 19 vessels;

(2) the replacement of four vessels;

(3) the construction, charter, or other acquisition of seven new vessels; and

(4) the acquisition of modern scientific instrumentation for the NOAA fleet, including acoustic systems, data transmission positioning and communication systems, physical, chemical, and meteorological oceanographic systems, and data acquisition and processing systems.

(b) SPECIFIC SCHEDULE.—(1) The Under Secretary shall, in fiscal year 1990—

(A) modernize one Class I, one Class III, and one Class IV vessel;

(B) develop specifications for one Class III replacement vessel;

(C) develop specifications for one new Class I deepwater oceanographic research vessel; and

(D) begin development of specifications for one new Class II bathymetric survey vessel.

(2) The Under Secretary shall, in fiscal year 1991—

(A) modernize two Class I vessels;

(B) award a contract to construct or otherwise replace one Class III vessel referred to in paragraph (1)(B);

(C) begin the development of specifications for one Class IV replacement vessel and one new Class II fisheries research vessel;

(D) award a contract to construct or otherwise acquire the new Class I deepwater oceanographic research vessel referred to in paragraph (1)(C); and

(E) continue to develop specifications for the new Class II bathymetric survey vessel referred to in paragraph (1)(D).

(3) The Under Secretary shall, in fiscal year 1992—

(A) modernize one Class I, one Class IV, and one Class V vessel;

(B) complete the specifications for the Class IV replacement vessel and the new Class II fisheries research vessel referred to in paragraph (2)(C); and

(C) award a contract to construct or otherwise acquire the new Class II bathymetric survey vessel referred to in paragraph (1)(D).

The Under Secretary shall continue to implement the fleet modernization and expansion program in subsequent years.

SEC. 5. PERSONNEL.

NOAA is authorized to fill 10 additional personnel positions to develop specifications for and provide for the construction, lease, or other acquisition of the modernized and expanded NOAA fleet.

SEC. 6. REPORT.

Within three months after the date of the enactment of this Act, the Under Secretary shall submit to the Congress a detailed plan for the implementation of this Act, including a schedule of anticipated modernizations, acquisitions of vessels, acquisitions of scientific instruments, hiring of additional personnel, and annual funding requirements.

SEC. 7. CONTRACT AUTHORITY.

(a) Multiyear Authority.—

(1) In general.—Notwithstanding the provisions of section 1341 of title 31, United States Code, and section 10 of the Act of March 2, 1861 (41 U.S.C. 11), the Under Secretary may enter into multiyear contracts and charter agreements described in paragraph (2) if the Under Secretary finds—

(A) that there is a reasonable expectation that throughout the contemplated contract or charter agreement period the Under Secretary will request funding from the Congress for the contract or charter agreement at the level required to avoid contract or charter agreement cancellation; and

(B) that the use of such contract or charter agreement will promote the best interests of the United States by encouraging competition and promoting economic efficiency in the operation of the NOAA fleet.

(2) CONTRACTS AND CHARTER AGREEMENTS.—The contracts and charter agreements referred to in paragraph (1) are the following:

(A) Multiyear contracts for the construction or purchase of property (including vessels and equipment) and services necessary to carry out this Act.

(B) Multiyear contracts for the lease of property (except vessels), including equipment, and services necessary to carry out this Act.

(C) A multiyear charter agreement for one of the seven new vessels referred to in section 4(a)(3).

(b) TERMINATION LIABILITY.—The Under Secretary may make appropriate provision in each contract or charter agreement entered into under this section that in the event of termination of the contract or charter agreement before the expiration of the stated term, the United States shall be liable for a specified amount to the contractor or charter agreement party, which shall be a valid obligation of the United States. In the event of any termination, the amount may be paid from—

(1) amounts originally appropriated for the performance of the contract or charter agreement;

(2) amounts then available from appropriations for procurement of the type of acquisition concerned, and not otherwise obligated; or

(3) amounts specifically appropriated for such payment.

(c) WORK TO BE PERFORMED IN UNITED STATES.—Except in case of emergency, all modernization, construction, and repair work performed after the date of the enactment of this Act on vessels owned, leased, chartered, or operated by NOAA shall be carried out in private shipyards in the United States, and no vessel shall be purchased, leased, chartered, or otherwise acquired by NOAA after that date unless the vessel was constructed in those shipyards, as follows:

(1) All major components of the hull and superstructure of the vessel shall be fabricated in the United States.

(2) The vessel shall be assembled entirely in the United States.

(3) At least 50 percent of the cost of all machinery (including propulsion) and components which are not an integral part of the hull or superstructure of the vessel, except for scientific equipment which cannot reasonably be purchased in the United States, shall be attributable to items procured in the United States.

SEC. 8. AUTHORIZATION OF APPROPRIATIONS.

There is authorized to be appropriated for carrying out this Act over the 10-year period encompassing the fiscal years 1990 through 1999, $440,000,000; of which $31,000,000 shall be for fiscal year 1990, $89,000,000 shall be for fiscal year 1991, and $68,000,000 shall be for fiscal year 1992. Any amounts authorized but not appropriated for a specific fiscal year shall be available for appropriation in subsequent fiscal years.

SEC. 9. DEFINITIONS.

In this Act—

(1) the term "Class I vessel" means a vessel with respect to which the sum of its shaft horsepower and gross tonnage is greater than 5,501 but does not exceed 9,000;

(2) the term "Class II vessel" means a vessel with respect to which the sum of its shaft horsepower and gross tonnage is greater than 3,501 but does not exceed 5,500;

(3) the term "Class III vessel" means a vessel with respect to which the sum of its shaft horsepower and gross tonnage is greater than 2,001 but does not exceed 3,500;

(4) the term "Class IV vessel" means a vessel with respect to which the sum of its shaft horsepower and gross tonnage is greater than 1,001 but does not exceed 2,000;

(5) the term "Class V vessel" means a vessel with respect to which the sum of its shaft horsepower and gross tonnage is greater than 501 but does not exceed 1,000;

(6) the term "gross tonnage" means the tonnage of a vessel under chapter 143 of title 46, United States Code;

(7) the term "multiyear" means more than one but not more than 10 years;

(8) the term "shaft horsepower" means the total horsepower produced by a vessel's main propulsion engines; and

(9) the term "Under Secretary" means the Under Secretary of Commerce for Oceans and Atmosphere.

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STATEMENT OF
REAR ADMIRAL FRANCIS D. MORAN
DIRECTOR, OFFICE OF NOAA CORPS OPERATIONS
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

BEFORE THE

SUBCOMMITTEE ON OCEANOGRAPHY
COMMITTEE ON MERCHANT MARINE AND FISHERIES
U.S. HOUSE OF REPRESENTATIVES

APRIL 27, 1989

Mr. Chairman and Members of the Subcommittee:

Thank you for the opportunity to appear before you today to discuss H.R. 896 and H.R. 897, bills that address vessels owned or operated by the National Oceanic And Atmospheric Administration (NOAA), U.S. Department of Commerce.

H.R. 896 would place NOAA vessel construction and repair contracts under the procurement policies and procedures of the Walsh-Healey Public Contracts Act (41 U.S.C. 35). NOAA has traditionally considered ship construction and repair contracts to be subject to the Act since 10 U.S.C. 7299 provides that construction, alteration, furnishing, or equipping of naval vessels are subject to Walsh-Healey. However, in a 1987 Department of Labor interpretation, vessels other than those under the authority of the U.S. Navy may be subject to the Davis Bacon Act (40 U.S.C. 276a). Mr. Chairman, we have reviewed the implications of applying the Davis Bacon Act to NOAA ship construction and repair contracts and have found that this would result in more costly and time-consuming procedures. The Davis Bacon Act would require the Department of Labor to establish prevailing wage rate determinations for shipyard personnel in the area of the contract's performance. No applicable determinations currently exist since shipyard functions are significantly different from other industrial construction and production activities. In addition, the application of Davis Bacon to NOAA contracts would result in shipyards paying different wages to the same employee depending on whether the job was a NOAA or a Navy job.

The Department of Commerce supports H.R. 896, which would provide parity between contract procedures for construction and repair of U.S. Government vessels.

The second bill H.R. 897, would authorize NOAA to implement a 10-year program to modernize the NOAA Fleet including the upgrade and service-life extension of 19 vessels, the replacement of 4 vessels, the construction of 7 additional vessels, and the acquisition of new scientific instrumentation. In addition, the bill would authorize NOAA to enter into multiyear contracts for the construction or purchase of vessels and equipment, and to enter into a multiyear charter agreement for one of the new vessels.

The Department of Commerce oppose enactment of H.R. 897.

Mr. Chairman, we recognize that our ships are aging and that our equipment requires an increasing amount of effort to maintain. We also recognize that for the foreseeable future NOAA programs will continue to require the high-quality ship support to which they have become accustomed. Within our budget limitations, we are focusing our attention on maintaining the capability of the aging NOAA Fleet to continue to provide the high-quality ship support required by NOAA's oceanographic, survey, and fisheries programs. In 1987, as part of this effort, an extensive material condition assessment was conducted of all 23 ships in the fleet to determine their condition and to identify any significant problems which would prevent extending service lives beyond that normally expected of ships. The results of that assessment, which Captain Kraine has provided to you, verified that our rigorous maintenance program in the past has resulted in a fleet which is generally in much better condition than commercial vessels of the same age and that NOAA vessels will continue providing service for at least the immediate future. Within our current budget constraints, we are addressing those elements that we consider of the highest priority including critical maintenance items, some new instrumentation, and a limited upgrade program. During the past few years, we have increased the use of the Global Positioning System on NOAA vessels, installed multibeam acoustic survey systems and acoustic doppler current profilers, deployed several enhanced capability scientific computer systems, and installed satellite communications systems. These systems have been deployed in limited quantities; however, their use has served to make data collection and processing functions more efficient. The upgrade program has addressed the most critical items required to keep vessels operational, such as, main propulsion engine overhauls, shaft and reduction gear repairs, ship service generator overhauls, and oceanographic winch and crane replacements. To date, the program has resulted in the limited upgrade of eight ships. The ninth vessel to undergo upgrade work, the MALCOLM BALDRIGE, spent a significant amount of time in the shipyard this year because of serious reduction gear and propeller shafting problems.

Mr. Chairman, H.R. 897, as currently written, authorizes NOAA to modernize 19 of our existing ships and, therefore, does not give NOAA the flexibility to replace those vessels with new technology which may be less costly and more efficient. One such technology is that of Small Water-Plane Area Twin Hulls (SWATH). SWATH technology is maturing rapidly; and, if coupled with advanced equipment and techniques such as multibeam swath survey systems, may allow us to make improvements in the efficiency of our operations. NOAA must complete technology assessments, cost analyses, and tests to determine which of our missions may be compatible with the attributes of the new technology. In addition, we need to explore ways to acquire vessel support without the burden of ship acquisition costs in a single year. The multiyear contract provision of your bill is a step in the right direction; however, it does not give us the option to enter into long-term lease/purchase arrangements for ships. The National Research Council's Marine Board recently recommended that NOAA acquire multiyear contract authority and actively pursue long-term vessel leases for selected missions.

Mr. Chairman, the Administration is opposed to H.R. 897. The Administration's opposition is based on the inflexibility NOAA would have to replace existing vessels with new, lower cost, more efficient ships. In view of the current Federal budget deficit problems, it is our position that H.R. 897 with its $440 million price tag is not the best option at this time.

This concludes my statement, Mr. Chairman. I will be glad to answer any questions that you or the other Committee members may have.

Testimony before the Subcommittee on
Oceanography of the House Committee
on the Merchant Marine and Fisheries

April 26, 1989

By
Captain Gilbert L. Kraine, USCG (ret)
Advanced Technology. Inc.
2121 Crystal Drive, Suite 300
Arlington, Virginia 22202

Mr. Chairman and Members of the Committee:

I would like to thank you for this opportunity to address the committee on HR897 which you have under consideration for the modernization and expansion of the NOAA Fleet

In May 1987, Advanced Technology, Inc. (ATI) was awarded a contract by the National Ocean Service (NOS) of the National Oceanic and Atmospheric Administration (NOAA) to assess the condition of the 23 ships of the NOAA Fleet and develop an Upgrade Plan. I was the ATI program manager for the work due to my background and prior experience.

I graduated from the U.S. Coast Guard Academy in 1950 with a Bachelor of Science in Engineering. Subsequently, I received a Master's degree in Naval Architecture and Marine Engineering and a Naval Engineer's degree from the Massachusetts Institute of Technology in 1958. I also hold an MBA in Finance from the Old Dominion University. During my Coast Guard career, I held a variety of positions directly responsible for the design, construction, alteration, maintenance and repair of Coast Guard cutters and commercial vessels. Since retiring from the Coast Guard, I have held management positions at several shipyards before joining Advanced Technology, Inc.

Currently, in addition to the work for NOAA, I have been engaged in several projects for the Naval Sea Systems Command (NAVSEA) involving the design and construction of various ships. This includes NAVSEA's small waterplane area twin-hull (SWATH) program.

In assessing the NOAA Fleet and developing the upgrade plan, we used the following approach, procedures and methods. I headed up a team of engineers with marine, structural, electronic and electrical engineering backgrounds as applied to ship design, construction, operation, maintenance and repair. We visited the National Ocean Service (NOS) headquarters, the Atlantic and Pacific Marine Centers, and the ships of the NOAA fleet. We interviewed the personnel involved in vessel maintenance and operations, and the key shipboard personnel including the Commanding Officer, Executive Officer, Chief and Assistant Engineers, electronic technicians, boatswains, stewards and scientific personnel. We inspected the records for each ship and extracted pertinent data regarding past problems and casualties, repairs, actual costs, and planned future maintenance activities.

We also visited and physically inspected every ship with the exception of the MURRE II. We entered every accessible space and inspected all major systems and items of machinery and equipment. The inspection was performed at dockside. Generally, we were not able to observe the ships underway however, we did ride several of the ships.

Based upon our visits, interviews, inspections and file searches, we developed a detailed assessment of the condition of each ship. The assessment was then analyzed to identify the work which would be required to extend the life of the ship, improve the ability of the ship to perform its mission, and increase the ship's productivity or efficiency. The analysis addressed each item of equipment or machinery. A proposed repair or replacement plan was developed and the cost of the work for each ship was estimated. Equipment repair was the preferred approach except when replacement was required by advanced deterioration, the mission criticality of the item, the availability of replacement parts or when overhaul costs exceeded replacement costs.

In the analysis phase, we developed a complete listing of the work required to extend the life of each ship or improve its capability to perform its mission. This list became the description of the upgrade project for that ship.

The various upgrade projects for the ships were then scheduled for performance over the period from Fiscal Year 1990 through 1999.

There are some caveats on the use of this study.

First, we were not tasked to review the scientific instrumentation in use aboard the ships. We did include laboratories and scientific spaces but did not address the need for upgrade of the scientific equipment in the spaces except for navigation and communications equipment used for normal ship operations.

Second, we were directed to assume that the current operational profile for each ship would continue in the future. We did not address the operational requirements for the ship, nor the possible need for additional ships to meet future missions.

Third, we did not consider replacing conventional NOAA ships with untraditional designs such as SWATH's. The replacement costs were based upon replacing each conventional single hulled NOAA ship with an approximately equal sized conventional single hulled ship.

Finally, all dollar estimates were based upon 1987 dollars.

We evaluated the NOAA fleet as being in better condition than commercial vessels of the same age, especially considering the demanding operational schedules and the limited maintenance funding. There are many hardworking and dedicated people in NOAA, both ashore and aboard the ships, who have performed admirably in the maintenance and repair of the ships over many years. NOAA's decentralized approach to maintenance is highly dependent on the competence of the individual. This approach was proven quite successful to date. However, there are some problem areas and problem ships.

The basic problem facing the NOAA fleet is "block obsolescence". Twenty of the 23 ships were built in the 1960s and only one since then. Ships have a normal life expectancy of 20 to 25 years. By that age, the obsolescence of some of the installed equipment and machinery, deterioration of systems and structures, and technological advances generally will require major maintenance efforts to continue the satisfactory operation of a ship. The bulk of the NOAA fleet is at that stage now. NOAA's diligent maintenance programs have helped to keep the vessels in a condition which makes the majority of them excellent candidates for service life extension programs. It is therefore our recommendation that such a program be undertaken immediately. Failure to initiate an upgrade program now may result in replacement being the only option left open to NOAA in the future.

In assessing the NOAA fleet, we did identify four ships which we recommended for replacement rather than a full, service life extension, upgrade program. These ships are the:

ALBATROSS IV
TOWNSEND CROMWELL
JOHN N. COBB
SURVEYOR

A limited upgrade project was developed for each of these four ships to correct various immediate problems and keep them operational until they are replaced. In addition, a design and construction plan was included in the Upgrade Plan for the replacements for these four ships.

A proposed schedule of upgrade projects was included in the report. The projects are divided between major and minor efforts with one major upgrade scheduled each year, alternating between Marine Centers in an attempt to balance the workload on the small staffs. One or more minor upgrades are also scheduled each year. The total cost of the program was estimated at $168 million over a 10-year period with $83 million for upgrades and $85 million for replacements.

The Upgrade Plan was based upon our best engineering judgment on the information provided to or obtained by us at the time. Some departures from the ATI plan which have occured are the result of NOAA's incorporation of other considerations, the presures of day to day operations and the delay in funding the program. As a result, the ATI plan is no longer completely current. It should be updated to reflect the changes which have taken place before it falls too far out of date.

In regard to the funding of the program, I believe that it would be a mistake to reduce the projected costs based upon anticipated savings from the use of SWATHs. This relatively new concept appears to offer certain distinct operational advantages. However, there is also a great deal that we don't know about SWATHs.

The U.S. Navy is currently constructing the TAGS-19 SWATHs at the McDermott Shipyards in Morgan City, Louisiana. This program can provide NOAA with a great source of data as to the actual advantages and disadvantages of building, operating and maintaining SWATHs especially the costs incurred. It has been my experience that all too frequently, the projected cost savings of a new development do not materialize. Reducing the funding for the NOAA Fleet Upgrade before the savings of a SWATH can be confirmed may prove to be another case of counting chickens before the eggs are hatched.

Thank You

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TESTIMONY TO SUBCOMMITTEE ON OCEANOGRAPHY AND GREAT LAKES
COMMITTEE ON MERCHANT MARINE AND FISHERIES
U.S. HOUSE OF REPRESENTATIVES

April 27, 1989

BY
J. EDWARD SNYDER
COMMITTEE ON ALTERNATIVE STRATEGIES FOR OBTAINING SHIP SERVICES

Chairman Hertel and Committee members, my name is J. Edward Snyder. I appear before you today as a member of a committee convened by the National Research Council (NRC) and as a retired Oceanographer of the Navy. The NRC Committee on Alternative Strategies for Obtaining Ship Services, which completed its study a year ago, assessed the issues associated with obtaining research vessel support from the private sector versus operating NOAA ships. Upon release of the report, the chairman of that committee, William Gaither, testified before this Subcommittee to present the findings and recommendations of the NRC study. Despite the passing of a year since his testimony and release of this report, the major findings and recommendations remain relevant today particularly in light of the proposed bill, H.R. 897.

Our NRC committee warned that the nation's needs for oceanographic ships are expanding, while expenditures to modernize and renew the NOAA oceanographic fleet are not keeping pace. The Ship Services Committee concluded that the NOAA Fleet represents a significant and unique part of the national oceanographic fleet capability and its future should be considered in the context of total national needs for oceanographic ships. Furthermore, the NOAA Fleet undoubtedly will play an important role in the nation's expanding need to perform marine resource assessment and oceanographic research, particularly with continued exploration of the Exclusive Economic Zone. The committee recommended that policy decisions concerning the future of the NOAA Fleet should ensure that the capability to support national interest at sea is strengthened, not diminished.

In order to address the problem of obsolescence of existing vessels and insure new vessel construction in the 1990s, the committee recommended that NOAA conduct a comprehensive study to define the characteristics of an idealized fleet to meet its present and future needs. The results of this study would serve as the basis for the replacement/modernization of the NOAA Fleet and the implementation of a program for leasing ship services. The committee proposed that NOAA accomplish fleet replacement/modernization by either seeking funds for new vessel construction or by undertaking a program of vessel lease purchase. I have been informed that within the last year, the NOAA has implemented an agency-wide, continuing planning process for determining oceanographic ship requirements for the next 20 years.

The committee strongly recommended that NOAA establish agency policy and procedures to enter into long-term multiyear contracts for ship charter and related scientific services. Based on the experiences of other vessel operating organizations, the committee found that long-term charters were more cost-effective and attractive for many ship services than short-term charters. Furthermore, the committee recommended that bathymetric surveying of the EEZ be an area in which NOAA should embark on an experimental program of long term contracting.

Although the NRC and others have identified the emerging problems of obsolescence, no new funds have been appropriated for new ships or for modernizing existing ones. Furthermore, multi-year contracting has yet to be undertaken by NOAA as an option for obtaining vessel services. H.R. 897 appears to address many of these issues and others discussed in the NRC study indicating that the NRC study continues to be relevant and that many of its recommendations have yet to be implemented.

Mr. Chairman, this concludes my written testimony. I will be pleased to answer questions pertaining to the study or ones that may draw on my past involvement with the Navy's and NOAA's oceanographic programs.

UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

STATEMENT ON

UNOLS PLANS FOR FLEET IMPROVEMENT

BEFORE THE

SUBCOMMITTEE ON OCEANOGRAPHY

OF THE

COMMITTEE ON MERCHANT MARINE AND FISHERIES

OF THE

U.S. HOUSE OF REPRESENTATIVES

April 27, 1989

I am William D. Barbee, Executive Secretary, University-National Oceanographic Laboratory System (UNOLS). I have, since 1982, headed the UNOLS Office, located on the campus of the University of Washington, Seattle, Washington. Prior to my present position I was for 32 years a commissioned officer in NOAA and predecessor agencies.

INTRODUCTION

The outlook for oceanographic research for the rest of the Twentieth Century and into the Twenty-First presents a challenge and at the same time tremendous opportunity. If the United States is to remain, as we have been since World War II, the world's leaders in oceanographic research we must support researchers adequately and provide them with modern, capable facilities. Especially, we must provide and maintain a U.S. oceanographic fleet capable of keeping pace with and filling the needs of exciting new research.

Research opportunities abound. Global-scale oceanographic studies will give new understanding to climate and climate control processes and to what we must do to limit man's impact. Environmental and ecological research can tell us how robust or fragile are our oceans. We've all been reminded recently that we sometimes walk a knife's edge in our use of the oceans. Studies of ocean floors are in the vanguard of geology and geophysics. But nearly all of these exciting research opportunities have something in common: they require ever more capable, more sophisticated ships and facilities, or else the ships limit the research. The minds and ideas of the brilliant men and women in our oceanographic community, not the ships in the oceanographic fleet, should shape our ocean research. The U.S. oceanographic fleet is a national resource that should be maintined at a level to match the needs of our oceanographic endeavors.

In my testimony I would like to report on the status of the UNOLS fleet -- the university fleet -- how it relates to other parts of the federal oceanographic fleet -- and on UNOLS planning for the fleet as we enter the twenty-first century. I am also happy to report that the efforts of two agencies, the Office of Naval Research and the National Science Foundation have already made impressive strides toward providing the kinds of ships needed to meet the challenges of oceanographic research.

The Federal Oceanographic Fleet

I will begin with an overview of the federal oceanographic fleet. The UNOLS fleet is part of a larger federal oceanographic fleet. The federal fleet consists of about 60 ships, comprised of research vessels owned or operated by federal agencies. The majority of the research ships operated by the federal agencies are specialized vessels dedicated to specific assignments such as mapping, charting, fisheries, and other mission-oriented surveys. These vessels are not generally available for academic research. UNOLS ships, operated by individual universities but owned or supported by federal agencies, carry out most of the basic research portion of the national oceanographic program. The federal fleet is coordinated by the Federal Oceanographic Fleet Coordinating Committee (FOFCC), whose meetings are generally attended by a UNOLS representative.

Historically and currently, federally sponsored ocean science research consists of three main elements:

1. Research for national security. This is managed by ONR and the Oceanographer of the Navy. It is conducted by Navy laboratories and other Navy elements together with the academic community. The Navy operates about a dozen research vessels in this program.

2. Research for civil federal agency missions managed by those agencies. For example, NOAA supports ocean research in support of charting, mapping, fisheries, weather and climate, Sea Grant, and environmental concerns. The Coast Guard supports research in support of the international ice patrol, ice-breaking and spill response. Other agencies carry out research in support of their ocean missions. The agencies conduct most of this research in-house, with a lesser amount conducted by the academic community. NOAA's 23-ship fleet is the largest in this area.

3. Research for basic knowledge and to develop applications of that knowledge of the oceans. This is generally managed by NSF and ONR and conducted by the academic community. The 20-ship UNOLS fleet supports most work by the academic community.

An effective, interactive national ocean research structure has arisen from these three elements. This structure includes program managers in the federal agencies, ocean researchers, some in the agencies and a large number in academia, and the federal oceanographic fleet. Each of the three elements also has laboratories and research facilities funded, at least in part, by the federal government.

To maintain the structure, the nation must support each of the three research elements (national security, federal civil missions, and basic research). The three elements are mutually dependent and supportive, and often overlap. Each has a programmatic role. Regression in any element would hurt the other two. The needs of all three are real. These three elements of the federal oceanograpic fleet are mutually supportive and complementary. Each, with their special modes of operation does an excellent job in supporting its mission. All have an urgent need for modern technical facilities, especially a modern set of ships.

The academic sector has made a magnificent contribution to the total. There is a continued need for involvement by the academic sector in all three elements, but especially in basic research.

The UNOLS Fleet

The UNOLS academic fleet contains 20 vessels over 100 ft. in length, operated by 18 member UNOLS institutions. Table I lists the vessels of the UNOLS fleet. This fleet includes all university ships having regular federal funding. Ships of this fleet carry out most of the basic research projects of the federal oceanographic program. UNOLS ships are primarily general-purpose research vessels with special capabilities in the basic sciences. Many universities operate small vessels for coastal and other research that are not included in the UNOLS fleet.

The ship-operating institutions are autonomous. However, UNOLS members acting jointly schedule the ships and coordinate performance standards. The National Science Foundation and the Office of Naval Research are the principal sponsors for the use of UNOLS ships. In addition, most of the federal agencies support some oceanographic projects on UNOLS ships.

UNOLS

UNOLS is a private organization of academic oceanographic institutions which operate oceanographic facilities. The essence of UNOLS objectives, as set forth in the charter is:

> UNOLS is a national system that works with the funding agencies to assist in the effective coordinated use, assessment, and planning of oceanographic facilities.

FLEET PLANNING

UNOLS and the academic ocean research community have long had an interest in and have promoted an effective fleet to support academic research in the ocean sciences. In June, 1986, we published **A Plan for Improved Capability of the University Oceanographic Research Fleet**. This plan assessed the capabilities of the (then) current UNOLS fleet (20 ships larger than 100 feet, largest 245 ft. L.O.A.). It examined trends in future research together with ship technology trends and thus developed a set of requirements for a UNOLS fleet adequate into the twenty-first century. Some of the findings were:

1. The UNOLS fleet was aging. In 1986 the fleet was at the halfway point in its rated service life.
2. Even the largest, most capable ships in the UNOLS fleet are not adequate to support the demanding, global-scale research foreseen for the 1990s and beyond. By the mid-nineties four of the seven large ships (over 200 ft.) will

have exceeded their 30-year service life. Replacement should start in the near-term, that is 1987 to 1990.

3. The mix of ships needed should be about evenly divided between the size classes of large, intermediate, and small.
4. New ships should have improved sea-keeping and station-keeping characteristics. They should have upgraded laboratory, overside handling, and scientific outfitting.
5, The new ships should provide for regular multi-disciplinary research. Several of these should have an enhanced capability for a particular discipline or field of work. These include multi-channel seismics, submersible operations, and polar research.

A plan was advanced for a program to meet these ship needs. The plan foresaw a fleet of roughly the same number and size (class) distribution as in the current UNOLS fleet (see Table II), although ships would be replaced by somewhat larger units. A proposed replacement schedule would replace the entire 20-ship fleet over a 30-year period (see Table III). The plan also included **Science Mission Requirements for New Oceanographic Ships** and a **Summary of Concept Designs**. Both mission requirements and concept designs emphasized large ships, since replacement in the class was deemed most urgent. Concepts were included for:

Large SWATH Research Vessels,
High Endurance Research Vessels (monohull), and
Medium Endurance Research Vessels.

Several ships in the fleet, especially in the larger ship classes, were somewhat specialized (e.g., for MG&G, capable for MCS, for polar operations, to support submersible operations). New ships would generally have better sea-keeping characteristics, better layouts and would accommodate larger science parties. The largest new ships would have capabilities, especially endurance, beyond anything currently available.

To sum up, the UNOLS plan for an improved academic research fleet projected a fleet of impressive capabilities, and, in general, foresaw somewhat larger and more capable ships replacing units now operating in the fleet.

Beginning in 1987, the UNOLS Fleet Improvement Committee has continued to assess the ship needs of the academic research community. They have re-examined programmatic ship needs (**Scientific Requirements for the UNOLS Fleet**), developed **Scientific Mission Requirements for Oceanographic Research Vessels** to cover large, intermediate and small classes, and issued a special report, **Arctic Science Requirements for Ice-worthy Research Vessels**. They are developing SWATH concepts for intermediate and small ship classes, and have initiated a preliminary design for a large, general-purpose monohull. It is interesting to note that the FIC has expressed UNOLS' community interest in SWATH ships by extending conceptual work to all class sizes: large, intermediate and small. UNOLS community interest in swaths has been consistent.

Although the FIC has not yet released a revised **UNOLS Fleet Improvement Plan**, they are well on their way. Indications now are that their revision will refine and extend the UNOLS (FRC) recommendations of June 1986, not change them drastically. Some likely elements of the new plan (refer to Tables II and III):

- The period covered will be 1989-2019
- The Improved Fleet would consist of 21 ships, 9 large, 6 intermediate and 6 small. (The increase of one large ship over the 1986 plan reflects the Research Vessel with Ice-Breaking Capability planned by NSF/DPP.)
- Although the Improved Fleet still might not include any ships on FOFCC's Class I (L.O.A. 275 ft. or over), large (Class II) ships would fall into two categories, those meeting requirements for high endurance (e.g., KNORR, MELVILLE, BERNIER, AGOR-23) and those meeting medium endurance requirements (e.g., AII, WASHINGTON, MOANA WAVE).
- A schedule will be included for mid-life modernization (upgrade) covering ships in all size classes.

The fleet supporting academic research in the U.S. comes from three sources: ships provided by the Navy through ONR, those provided by NSF and ships built or converted to oceanographic research use through private or state funds. The force to fleet status is that they are all operated by academic research institutions and largely funded through NSF and ONR. Thus UNOLS' efforts are, essentially, a set of recommendations to funding agencies and UNOLS-member institutions. Ship acquisition or construction plans and fleet plans are the purview of those funding agencies and institutions.

There has already been considerable progress in fleet improvement:

- MELVILLE and KNORR are getting modernized under ONR sponsorship,
- THOMPSON is being replaced by AGOR-23, by the Navy,
- CONRAD is being replaced by BERNIER, by NSF,
- The lease action by NSF/DPP should satisfy ice-capable ship requirements for the Antarctic.

TABLE I

The UNOLS Fleet

Ship	Operator	loa (ft)	Built	no. sci.	Owner
Moana Wave	University of Hawaii	213	1973	20	Navy
Alpha Helix	University of Alaska	133	1965	15	NSF
Wecoma	Oregon State University	177	1975	16	NSF
Point Sur	Moss Landing Marine Lab	135	1981	12	NSF
*Osprey	University of Southern Calif.	220	1973	16	U.S.C.
**Melville	Scripps	245	1969	29	Navy
T.Washington	Institution	209	1965	22	Navy
New Horizon	of	170	1978	13	U.C.
R.G.Sproul	Oceanography	125	1981	12	U.C.
Gyre	Texas A&M University	182	1973	21	Navy
Fred Moore	University of Texas	165	1967	20	U.T.
Pelican	Louisiana Universities Marine Consortium	105	1984	14	LUMCON
Iselin	University of Miami	170	1971	16	U.M.
Cape Hatteras	Duke/UNC Consortium	135	1981	12	NSF
R.Warfield	Johns Hopkins University	106	1967	10	J.H.U.
Cape Henlopen	University of Delaware	120	1975	12	U Del
Endeavour	University of Rhode Island	177	1976	16	NSF
**Knorr	Woods Hole	245	1969	24	Navy
Atlantis II	Oceanographic	210	1963	25	WHOI
Oceanus	Institution	177	1975	12	NSF

* under conversion to research vessel use.

** to be rennovated in 1989-1990 to new ship condition

In addition, the 275 ft. AGOR-23 is under construction by the U.S.Navy to be operated beginning in 1989 by the University of Washington.

Beginning in late 1989, a 239 ft. research vessel specializing in marine geology and geophysics will be operated by Lamont-Doherty Geological Observatory, University of Columbia. NSF is supporting this ship acquisition.

TABLE II

June 1986

Profile of Planned UNOLS Fleet

	Existing Fleet	Upgraded Fleet
Large Ships: Classes I & II (over 200 ft)		
General Purpose	5	4
MCS Capable	1	2
Ice Capable	0	1
Submersible Handling Capable	1	1
Intermediate Ships: Class III (150-199 ft)		
General Purpose	6	6
MG&G Ship	1	0
Small Ships: Class IV (100-149 ft)		
General Purpose	6	5
Ice Capable	0	1
TOTAL	20	20

TABLE III

June 1986

Fleet Improvement Plan Shown by 5-year Increments

Time Frame	LARGE (Over 200 ft.) Classes I & II	INTERMEDIATE (150-199 ft.) Class III	SMALL (100-149 ft.) Class IV
1986-1989	1 new 1 new (MCS capable) modernize two	- - -	- - -
1990-1994	1 new (ice capable) 1 new (MCS capable)	- - - - - -	1 new (ice capable)
1995-1999	- - -	2 new	1 new
2000-2004	1 new (sub-handling capable)	1 new	2 new
2005-2009	1 new	3 new	- - -
2010-2014	2 new	- - -	2 new
TOTAL	8	6	6

This plan will need continuing review and updating in order to keep up with changing times and requirements. In addition, selected designs might be further developed; and new concept designs started on smaller ships and innovative platforms. This calls upon UNOLS to provide for continuing efforts in the fleet replacement process.

United States General Accounting Office

GAO

Testimony

For Release on
Delivery
Expected at
10:00 a.m.
Thursday
April 27, 1989

STATUS OF THE RESEARCH FLEET OF THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION DEPARTMENT OF COMMERCE

STATEMENT OF
JOHN M. OLS, JR., DIRECTOR, HOUSING AND COMMUNITY
DEVELOPMENT ISSUES
RESOURCES, COMMUNITY AND ECONOMIC DEVELOPMENT
DIVISION

BEFORE THE
SUBCOMMITTEE ON OCEANOGRAPHY AND GREAT LAKES
COMMITTEE ON MERCHANT MARINE AND FISHERIES
HOUSE OF REPRESENTATIVES

Mr. Chairman and Members of the Subcommittee:

We are pleased to be here today at your request to discuss our current work on the National Oceanic and Atmospheric Administration's (NOAA's) research fleet as it relates to H.R. 897 which authorizes NOAA to modernize its fleet and to use multiyear chartering to obtain ship support.

At the request of the former Chairman of this Subcommittee, we reviewed NOAA's fleet ability to meet current and future mission requirements. The NOAA fleet consists of 23 major vessels. These vessels, ranging in length from 86 to 303 feet, support NOAA's programs in mapping and charting, fisheries research and oceanographic and atmospheric research. To accomplish the former Chairman's request, we conducted an opinion survey of NOAA fleet users who are responsible for directing research projects of the major NOAA organizations that use the fleet to carry out their mission objectives. We obtained their views on the adequacy of NOAA's fleet support to meet current and future mission requirements.

Our work showed, among other things, that

--although increasing research responsibilities have been assigned to NOAA, its fleet support of research has decreased over the past several years primarily because of budget restraints,

--NOAA users, for the most part, are not satisfied with the allocated ship time to conduct research or the existing ships' capabilities in carrying out their research,

--most users believe that upgrades of existing ships and equipment, as well as, additional ships are needed to carry out future research, and

--NOAA has not adopted a strategy to meet future fleet support needs.

We believe, Mr. Chairman, that NOAA needs to develop a strategy for meeting future research needs for ship support. Accordingly, we support the objectives of H.R. 897 and its requirement that NOAA develop a detailed fleet modernization plan. We also support the bill's authorization for NOAA to enter into multiyear chartering which will provide NOAA with the flexibility needed to experiment with this alternative as a way to obtain ship support to meet future research needs.

I would now like to briefly discuss the fleet users' views on the adequacy of fleet support and the effect such support has on

NOAA's mission objectives, the need to upgrade the vessels, and the effect that new technology might have on future fleet requirements.

GAO SURVEY OF FLEET USERS

In conducting our survey, we identified over 100 fleet users who conducted research or led hydrographic surveys on NOAA's ships in fiscal year 1987 (the most recent fiscal year for which information was available when we started our work). These fleet users included NOAA scientists from the National Marine Fisheries Service, the Office of Oceanic and Atmospheric Research, and the National Ocean Service. We selected 41 scientists from these major program organizations that rely on ship support to carry out their research.

ADEQUACY OF FLEET SUPPORT AND ITS EFFECT ON RESEARCH

We asked these scientists to rate the adequacy of fleet support that they received during fiscal years 1986 through 1988. Twenty-eight of the 41 scientists said NOAA's fleet support was less than adequate for one or more of their research programs. Their research activities included collecting biological and environmental data on living marine resources of commercial, recreational or ecological importance; studying the general circulation of the global ocean to predict the ocean's response to long-term changes in the atmosphere; and conducting hydrographic surveys to produce nautical charts. These 28 scientists cited two main areas where fleet support did not meet their needs: (1) not enough ship time to carry out their research and (2) problems with the vessels' equipment and their capabilities.

Although the majority of the 28 scientists said they were generally able to meet their research objectives, they told us that the level of ship support decreases their effectiveness because they do not collect information either in the amount or quality they need.

Availability of Ship Time

Eighteen of the 28 scientists who were dissatisfied with the level of fleet support said they did not receive a sufficient number of days-at-sea to conduct their research. Individual estimates of the additional days-at-sea needed ranged from 5 to 90 days. According to some fishery program scientists, as a group, they received only about 50 percent of the days-at-sea needed to do their work in fiscal year 1988.

The 18 scientists said that they did not receive enough fleet support for various reasons including the availability of NOAA research funding, NOAA's mission priority for their research activities, the availability of NOAA's ships with required capabilities, and the availability of operational funding to repair and maintain NOAA's ships.

Problems with Ship Capabilities and Ship Equipment

Twenty-six scientists of the 28 said one or more characteristics of the vessels or the equipment hindered their research. They cited such things as (1) problems with the ship winches, (2) the inability of some vessels to remain at sea for extended periods of time, (3) inadequate deck working areas, and (4) inadequate vessel laboratories. Twenty scientists said that winches, which are used to deploy and recover oceanographic scientific equipment, hindered their research. One scientist said he lost about $75,000 worth of equipment because a winch malfunctioned and his equipment was lost at sea.

About one-third of the scientists who expressed concern about fleet support said that inadequate onboard computer systems and scientific instruments hindered their research. Scientists also identified problems with the ships' acoustic systems, navigation, positioning, and communication systems. They told us that they needed additional, as well as, more modern computers to process and integrate their data with other environmental data while aboard ship, improved satellite communications to transmit data, and better positioning systems to improve the precision of their research.

Effect of fleet support on research

Sixteen of the 28 scientists, who said fleet support was inadequate for their research added, however, that they were able to meet most or all of their research objectives. Because scientists may design their research objectives considering limitations in fleet support, we asked them whether these limitations decreased their research effectiveness.

All 28 of the users who expressed concern about fleet support said their effectiveness in conducting research decreased because, in general, they do not collect information either in the amount or quality they need. For example, one scientist said a shortfall in research funds and the limited availability of a NOAA ship with specialized gear forced his group to conduct clam surveys every 2 years instead of annually. He said clam surveys compete with many other users for limited ship time. He said that clams are an important commercial resource and the Mid-Atlantic Fisheries Management Council, as its first priority, requested NOAA to conduct clam surveys in 1989 to ensure that the Council had the information it needed to manage the resource.

Another scientist said the National Ocean Service is not doing the number of surveys that it did previously because of the decreasing number of days-at-sea NOAA is dedicating to in-shore hydrographic surveys in support of nautical charts. We noted that as NOAA has had to respond to increasing demands for ship time from different program activities, while also facing restrained budget support for the fleet, it has decreased the number of sea days it spends on surveys for nautical charts from about 1,400 days in 1983 to about 820 days in 1988.

Beneficiaries of Research Adversely Affected

All but 1 of the 28 scientists who told us fleet support was not adequate also said that public and private entities who use NOAA's research are adversely affected by NOAA's inability to provide adequate fleet support. They said beneficiaries such as federal and state fishery managers, commercial fishermen, seafood consumers, commercial shipping operators and recreational boaters, and federal and state environmental regulatory agencies were adversely affected. One oceanography scientist said he was unable to collect enough environmental samples for NOAA's analysis of water pollutants because of problems with the ship's winches. He added that the Environmental Protection Agency and the Washington State Department of Ecology are not receiving sufficient data to monitor water quality for pollution control purposes. According to one local official, in the past, NOAA has helped to identify sources of pollution entering Puget Sound. The official is concerned because NOAA has discontinued this work.

IMPROVEMENTS ARE NEEDED IN NOAA'S FLEET SUPPORT

NOAA's fleet users, including those who are generally satisfied with the current level of fleet support, said improvements are needed in ship instrumentation and the ships' capabilities to support future research. Thirty-seven of the 41 scientists called for upgrading of NOAA's vessels. The most frequently reported ship-board needs were winches, scientific instrumentation, laboratories, depth-sounding systems, computers and storage areas for scientific equipment and samples.

Twenty-five scientists said NOAA should build more ships to support future research. Most believed that the new ships should be multipurpose, but they varied widely in their opinions as to the number of new ships needed (ranging from 1 to 7) and the size and capabilities of the ships (ranging from Class I type ships to Class V type ships).[1]

NEW TECHNOLOGIES AND THE NEED FOR NOAA SHIPS

Although most scientists (40 of 41) said new computers, satellite systems, or other new technologies would most certainly help their future research, very few believe such technologies would reduce the need for ship time. According to thirty-two fleet users, new technology improvements would not reduce their need for ship time.

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[1] Classes of ships are determined by a combination of each ship's gross tonnage and rated horsepower.

Some fleet users thought their need for ship time would not be affected by new technology because improvements in processing and transmitting data, for example, would not reduce the time needed to collect the data. Others said that improved efficiencies in collecting and processing data would allow them to collect and process more data than they do now and this would increase the accuracy and the reliability of their research.

IMPACT OF SHORTFALL IN FLEET SUPPORT ON FUTURE RESEARCH

Fleet users generally agreed that a shortage in fleet support would affect NOAA's ability to meet future program responsibilities in fisheries, mapping and charting, and ocean research.

Fishery Program Responsibilities

NOAA is responsible for providing scientific information used by fishery managers. To provide such information, NOAA scientists conduct stock assessments and biological and environmental studies. NOAA ships provide more than two-thirds of the ship time used for these studies while charter vessels provide the remainder.

For example, some fishery scientists said if NOAA could not meet their future fleet needs then either the scope or the quality of their stock assessments and complimentary studies, such as studies of fishery habitats, would be affected. They said regulatory agencies responsible for managing fish stocks would not have information to manage the stocks. Some scientists said that inadequate information could have an adverse economic consequence on the fishing industry. One scientist, in demonstrating the economic importance of the stock assessments, said when an accurate assessment of the sable fish population was provided to the Regional Fishery Management Council, it permitted the Council to increase the fishing quotas which, in turn, increased profits for the fishing industry.

Mapping and Charting Responsibilities

NOAA is also responsible for conducting hydrographic surveys to produce nautical maps and charts used for navigation of the nation's coastal areas. It is also responsible for mapping the U.S. Exclusive Economic Zone.[2]

Some NOAA users engaged in hydrographic surveys of the coastal areas expressed concerns about decreases in NOAA's fleet support. For example, one user said that NOAA has sharply reduced its survey work of coastal areas because of competing priorities, and said hazardous navigation conditions often exist in the coastal areas. For example, we noted that the number of days-at-sea NOAA spent on surveying the coastal areas decreased as it used more of its hydrographic survey resources to map the economic zone. Fleet users engaged in hydrographic surveys said without adequate fleet support to produce accurate nautical charts, the lives and property of commercial shippers, fishermen, and recreational boaters are at risk.

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[2] The U.S. Exclusive Economic Zone was established by presidential proclamation in 1983 which asserted jurisdiction over all resources in and below the oceans along U.S. coasts and out to the 200-nautical-mile limit previously established for fisheries.

For example, the Chief of the National Ocean Service's Hydrographic Surveys Branch estimated that NOAA has not surveyed about 60 percent of the Alaskan coasts with modern methods. One scientist told us that, NOAA has not charted areas of Bristol Bay and the Aleutian Islands, and fishermen working these areas have requested NOAA surveys. The Chief of the Hydrographic Surveys Branch told us that NOAA has only been able to complete about 40 percent of the work it wanted to do in Bristol Bay because it does not have the ship time it needs.

According to one scientist if NOAA does not get the ship resources to carry out its responsibilities to map the Exclusive Economic Zone, the United States would ultimately be limited in its ability to capitalize on exploring mineral resources in the zone, and private industry's cost of developing these resources would increase. NOAA and the U.S. Geological Survey are preparing a 10-year plan to map and research the economic zone's sea floor. NOAA is projecting that it will need sharp increases in the number of days-at-sea to survey the zone.

Ocean Assessments Program Responsibilities

NOAA has a major role in researching environmental systems to support national policy and decision-making on environmental issues. Oceanography scientists were generally concerned that inadequate future fleet support for their research would diminish their ability to provide environmental managers with essential information. For example, one oceanography scientist engaged in research to improve the ability to predict tsunamis (giant tidal waves) told us that his research requires three cruises a year to recover, refurbish, and redeploy measurement instrumentation at five different stations in the Pacific Ocean. His research may lead to better prediction of tsunamis; however, if fleet support is not available in the future, he will not be able to maintain the survey stations nor satisfactorily carry out his research.

NOAA MANAGERS FIND A NEED TO MODERNIZE THE FLEET

NOAA's fleet managers have evaluated the condition of the fleet and NOAA's future mission requirements and have found a need to upgrade and modernize the fleet. Specifically,

- a 1988 assessment of the fleet's condition by Advanced Technology, under contract with NOAA, concluded that, although the ships are in generally good condition for their age, NOAA needs to embark upon a major upgrade program to extend the useful life of its ships,

- fleet instrumentation managers are concerned about the aging condition of shipboard instrumentation and data processing equipment and in 1988 identified ship instrumentation upgrade needs including data processing, navigation, positioning and communication systems,

- program managers expect increases in their need for fleet support over the next 20 years to respond to changing and/or increasing responsibilities in protecting and understanding the environment, providing information to manage and develop the ocean's resources, and charting the ocean sea floor,

- the National Research Council's Marine Board, in a 1988 study conducted at the request of the former Administrator of NOAA, concluded that, overall, it appears that the nation's ocean needs are expanding, while capital expenditures for the fleet by NOAA are not keeping step with present or future requirements. The Marine Board recommended, among other things, that NOAA take the steps to experiment with long-term charters in order to determine their desirability for providing ship support for certain NOAA missions.

LONG RANGE PLANS NOT ADOPTED

NOAA has not adopted a strategy for modernizing the fleet and has not yet proposed to the Congress a program to effectively implement a needed modernization program. The need for a modernization strategy is important because NOAA needs to determine how it will continue to provide fleet support to its missions in the future. The average age of NOAA's ships is approaching 25 years and the majority of the ships will become obsolete in the 1990's according to useful life criteria for such ships cited by the Marine Board. According to the Marine Board, because of the time needed to plan and build a ship, ship replacement planning needs to be conducted now for ships to be completed by the 1990's.

In March 1989 we discussed the fleet users' views on the adequacy of fleet support and the need for a fleet modernization plan with the Under Secretary for Oceans and Atmosphere. He told us that the problems with fleet support have been caused primarily by the reduced budgets NOAA has had for the fleet in the past. He said that NOAA needs to prepare a comprehensive plan to upgrade and modernize the fleet and is evaluating its needs.

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Mr. Chairman, this concludes my testimony. I will be pleased to respond to any questions that you or members of your Subcommittee may have.

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MARINE AND FISHERIES COMMITTEE

STATEMENT OF
REAR ADMIRAL RICHARD F. PITTENGER, U.S. NAVY
OCEANOGRAPHER OF THE NAVY
BEFORE THE
SUBCOMMITTEE ON OCEANOGRAPHY
OF THE
HOUSE MERCHANT MARINE AND FISHERIES COMMITTEE
ON THE
STATUS OF THE FEDERAL OCEANOGRAPHIC FLEET

27 APRIL 1989

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MARINE AND FISHERIES COMMITTEE

REAR ADMIRAL RICHARD F. PITTENGER

Oceanographer of the Navy (CNO OP-096)

A native of Nebraska, Rear Admiral Richard F. Pittenger grew up in Tacoma, Washington. He was commissioned an ensign in June 1958 after attending four years at the U. S. Naval Academy and was subsequently selected for the rank of Rear Admiral in 1984.

Following graduation from the U.S. Naval Academy he was assigned to USS DUPONT (DD 941) as Anti-Submarine Warfare (ASW) Officer and Torpedo Officer from 1958 to 1960. After leaving DUPONT he reported as ASW Officer on the commissioning crew and later served as Missile Officer on USS FARRAGUT (DLG 6) from 1960 to 1962. From 1962 to 1965, Rear Admiral Pittenger attended the Naval Postgraduate School in Monterey, California, where he earned a Master of Science degree in physics (underwater acoustics).

Upon completion of postgraduate studies, he served as Weapons Officer aboard USS RAMSEY (DEG 2). In 1967, he assumed command of USS PLEDGE (MSO 492). This was followed by a tour as Aide and Flag Lieutenant to Commander First Fleet. From 1969 to 1971, he served as Executive Officer aboard USS PERRY (DD 844). He reported to the Naval War College, Newport, Rhode Island as a student in 1971.

In 1972, Rear Admiral Pittenger assumed duties as Force ASW Officer for Commander Cruiser Destroyer Atlantic and in 1975 he became Surface ASW Officer on the newly formed Commander Naval Surface Force, U.S. Atlantic Fleet Staff. He subsequently served as Commanding Officer of USS CONNOLE (FF 1056). Following his tour on CONNOLE, Rear Admiral Pittenger reported to the Staff of the Chief of Naval Operations, serving a year term as the Head, ASW Branch, Surface Combat Systems Division (OP-353). He then served for two years as Commander Destroyer Squadron 26.

In 1984, Rear Admiral Pittenger became both Chief of Staff, U.S. Naval Forces, Europe, and Deputy U.S. Commander Eastern Atlantic, with headquarters in London.

In 1986, Rear Admiral Pittenger became Director, Antisubmarine Warfare Division, OP-71. He was permanently appointed to two star Rear Admiral on 1 October 1987.

In September 1988 Rear Admiral Pittenger became the Oceanographer of the Navy (OP-096).

He is married to the former Marjorie Andrade and has three daughters, Elizabeth, Margaret, and Katie and a son, John James.

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE, I AM RADM PITTENGER, OCEANOGRAPHER OF THE NAVY. I AM PLEASED TO BE HERE THIS MORNING REPRESENTING THE U.S. NAVY AND I WELCOME THE OPPORTUNITY TO COMMENT ON THE NAVY'S OCEANOGRAPHIC SHIP FLEET. THE NAVY'S OCEANOGRAPHIC FLEET IS A VITAL ASSET IN OUR BROAD PROGRAM TO PROVIDE ENVIRONMENTAL SUPPORT TO NAVAL OPERATIONS. IT IS ALSO AN INTEGRAL PART OF THE OVERALL NATIONAL CAPABILITY IN OCEANOGRAPHY. WE ARE NOW, HOWEVER, AT THE PIVOTAL POINT OF REPLACING OUR AGING AND OBSOLETE VESSELS. YOUR CONTINUED SUPPORT FOR THE ACQUISITION OF A MODERN, EFFICIENT AND WELL-BALANCED MIX OF OCEANOGRAPHIC SHIPS WILL PERMIT US TO MEET THE DIVERGENT OPERATIONAL REQUIREMENTS OF OUR WARFIGHTING FORCES, WHILE ALSO CONTRIBUTING TO AN IMPORTANT NATIONAL ENTERPRISE.

NAVY OCEANOGRAPHIC MISSION: THE U.S. NAVY HAS HAD A LONG AND ABIDING COMMITMENT TO OCEANOGRAPHY, WHICH REFLECTS THE NAVY'S REQUIREMENT FOR DETAILED KNOWLEDGE OF ITS OPERATING ENVIRONMENT. OUR OCEANOGRAPHIC PROGRAM, SUPPORTED BY AN ACTIVE OCEANOGRAPHIC FLEET, IS A 24-HOUR, 365 DAY EFFORT WHICH RESULTS IN PRODUCTS AND SERVICES THAT DIRECTLY SUPPORT NAVY OPERATIONAL REQUIREMENTS. THEREFORE, OUR OCEANOGRAPHIC SHIP PROGRAM MAKES A CRITICAL

CONTRIBUTION TO THE ULTIMATE SUCCESS OF THE NATION'S NATIONAL DEFENSE.

THE U.S. MAINTAINS A GLOBAL, NAVAL FLEET WITH FORCES DEPLOYED WORLDWIDE PROTECTING SEA LANES AND SERVING CRITICAL U.S. INTERESTS IN MANY DISTANT AREAS. AS SUCH, THE NATURAL DOMAIN OF THE NAVY IS THE WORLD OCEAN...EXTENDING FROM THE SEA FLOOR TO WELL ABOVE THE AIR-SEA INTERFACE. OUR SHIPS, SUBMARINES AND AIRCRAFT ARE DEPLOYED WITHIN THIS DOMAIN AROUND THE CLOCK, EVERY DAY OF THE YEAR.

THE COMPOSITION OF THE NAVAL OCEANOGRAPHIC FLEET TAKES INTO ACCOUNT OUR INTERESTS IN DISTANT STRATEGIC AREAS WHERE THE ENVIRONMENT IS OFTEN POORLY KNOWN, AND IN SPECIAL REGIONS WHICH ARE ENVIRONMENTALLY COMPLEX OR UNIQUE. THE BLISTERING COLD AND SOLID ICE PACK OF THE ARCTIC AND THE TORRID HEAT AND SANDSTORMS OF THE PERSIAN GULF ARE EXAMPLES OF THE EXTREMES. THE NAVY'S DEMAND FOR KNOWLEDGE OF THE OCEANS IS GREATER THAN EVER BEFORE AND CONTINUES TO INCREASE AS NAVAL OPERATIONS SPAN THE WORLD FROM COMPLEX SHALLOW REGIONS TO THE DEEP OCEAN BASINS. ADDITIONALLY, AS WEAPONS, SENSORS, PLATFORMS AND TACTICS HAVE BECOME MORE SOPHISTICATED TO COUNTER THE INCREASINGLY COMPLEX AND

HARD-TO-DETECT TARGETS, INCREASED KNOWLEDGE OF OCEANOGRAPHIC FACTORS HAS BECOME AN ESSENTIAL ELEMENT IN WEAPON SYSTEMS' DEVELOPMENT AND PERFORMANCE, AND IN FORCE DEPLOYMENT.

THE NEED TO GAIN A MORE COMPLETE KNOWLEDGE OF THE OCEANS IS ACCENTUATED BY THE NAVY'S DECLARATION THAT ANTI-SUBMARINE WARFARE IS ITS HIGHEST PRIORITY. THE SOVIET FLEET COMPOUNDS THE PROBLEM FOR OUR ASW FORCES BY ITS EFFECTIVE USE OF THE ENVIRONMENT AND ITS EFFORTS TO REDUCE SUBMARINE-RADIATED NOISE. ALSO, THE USSR'S LONG RANGE WEAPONS ALLOW ITS STRATEGIC SUBMARINE FLEET TO OPERATE CLOSER TO ITS OWN SHORES. OUR OCEANOGRAPHIC SHIPS, THEREFORE, MUST NOW COLLECT MORE PRECISE OCEANOGRAPHIC DATA AND DATA FROM AREAS NOT ACCESSIBLE TO THE OBSOLETE SHIPS OF OUR FLEET.

NAVY OCEANOGRAPHIC SHIP FLEET: THE NAVY OCEANOGRAPHIC FLEET CONSISTS OF 18 DEEP-OCEAN CAPABLE SHIPS. TWELVE SHIPS ARE OPERATED BY THE NAVY AND SIX ARE NAVY-OWNED, UNIVERSITY OPERATED RESEARCH VESSELS. THESE 18 SHIPS ARE ASSIGNED TO FOUR MISSION CATEGORIES AS FOLLOWS: FOUR TO DEEP OCEAN SURVEY, TWO TO COASTAL SURVEY, SIX TO GENERAL PURPOSE OCEANOGRAPHIC SURVEY, AND SIX TO UNIVERSITY RESEARCH. ON THE AVERAGE, THESE 18 SHIPS EACH OPERATE MORE THAN 230 DAYS PER YEAR ON A GLOBAL BASIS.

THE FOUR DEEP OCEAN SURVEY SHIPS PROVIDE HIGH-RESOLUTION BATHYMETRIC DATA TO SUPPORT STRATEGIC SUBMARINE MAPPING AND CHARTING REQUIREMENTS. WE NOW HAVE TWO NEW DEEP OCEAN SURVEY SHIPS NEARING COMPLETION OF CONSTRUCTION THAT WILL REPLACE TWO WORLD WAR II VINTAGE VESSELS. ONE OF THESE NEW SHIPS, USNS MAURY, WAS DELIVERED TO NAVY ON MARCH 31, 1989 AND WILL COMMENCE FLEET OPERATIONS IN AUGUST. THE OTHER VESSEL, USNS TANNER, WILL BE DELIVERED IN APRIL 1990.

THE TWO COASTAL HYDROGRAPHIC SURVEY SHIPS IN SERVICE, SUPPORT MISSION REQUIREMENTS FOR ACCURATE COASTAL CHARTS. IT MAY SUPRISE YOU THAT, ALMOST 75 PERCENT OF THE WORLD'S COASTLINE IS INADEQUATELY CHARTED TO SUPPORT NAVY MISSIONS. THEREFORE, WE MUST INCREASE OUR CAPABILITY TO CONDUCT COASTAL HYDROGRAPHIC SURVEYS IN ORDER TO KEEP PACE WITH THESE IDENTIFIED REQUIREMENTS. IN 1987 CONGRESS SUPPORTED THIS NEED AND FUNDED TWO ADDITIONAL COASTAL SURVEY VESSELS WHICH ARE NOW UNDER CONSTRUCTION IN PASCAGOULA, MISSISSIPPI FOR DELIVERY TO NAVY IN EARLY 1991. THESE VESSELS HAVE BEEN NAMED THE USNS MCDONNELL AND USNS LITTLEHALES.

IN ADDITION TO NAVIGATIONAL CHARTING NEEDS, WE ALSO HAVE SIX

SHIPS THAT DIRECTLY SUPPORT REQUIREMENTS FOR FLEET OPERATIONS AND WEAPONS SYSTEMS DEVELOPMENT. THESE OCEANOGRAPHIC SHIPS ARE DEVOTED TO SURVEY EFFORTS WHICH INVOLVE A VARIETY OF UNDERWATER ACOUSTIC, PHYSICAL OCEANOGRAPHIC AND GEOPHYSICAL DATA COLLECTION PROGRAMS, AS WELL AS PROCESS ORIENTED, SITE AND WEAPON-SPECIFIC INVESTIGATIONS.

AS MENTIONED EARLIER, THE NAVY HAS LONG RECOGNIZED THE NECESSITY OF MAINTAINING A NATIONAL CAPABILITY FOR BASIC OCEANOGRAPHIC RESEARCH. THE SIX NAVY-OWNED, UNIVERSITY OPERATED SHIPS, ASSURE THE AVAILABILITY OF ASSETS AT ACADEMIC INSTITUTIONS TO SUPPORT NAVY-SPONSORED RESEARCH. THESE SHIPS, OPERATED BY THE UNIVERSITIES AS NATIONAL ASSETS, ARE PART OF THE UNIVERSITY NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM (UNOLS). AS SUCH, THESE SHIPS ARE ALSO USED TO CONDUCT RESEARCH SPONSORED BY OTHER FEDERAL AGENCIES, SUCH AS THE NATIONAL SCIENCE FOUNDATION AND THE DEPARTMENT OF THE INTERIOR AS WELL AS TO CONDUCT PRIVATELY FUNDED RESEARCH. THE FIRST, NEW RESEARCH SHIP IN SIXTEEN YEARS IS UNDER CONSTRUCTION AND WILL REPLACE THE FORMER R/V THOMPSON. UPON DELIVERY OF AGOR 23 IN THE FALL OF 1990, IT WILL BE ASSIGNED TO CHIEF OF NAVAL RESEARCH AND OPERATED BY THE UNIVERSITY OF WASHINGTON.

THE MAJORITY OF THE NAVY'S OCEANOGRAPHIC SHIPS, AS WELL AS THOSE IN THE FEDERAL FLEET, WERE DESIGNED AND BUILT DURING THE 1960'S. MODERN OCEANOGRAPHIC EQUIPMENT AND NEW REQUIREMENTS HAVE MADE MANY OF OUR SHIPS TECHNOLOGICALLY OBSOLETE. IN ADDITION, SIGNIFICANT NUMBERS OF OUR SHIPS ARE FACED WITH BLOCK OBSOLESCENCE. FOR EXAMPLE, SIX NAVY SHIPS WILL HAVE REACHED THE END OF THEIR EXPECTED SERVICE LIVES BY 1992, AND BY 1998 THE REMAINING SHIPS WILL HAVE REACHED THE END OF THEIR EXPECTED SERVICE LIVES.

IN 1984, BOTH THE SECRETARY OF THE NAVY AND THE CHIEF OF NAVAL OPERATIONS RECOGNIZED THIS BLOCK OBSOLESCENCE PROBLEM IN SEPARATE POLICY STATEMENTS AND DIRECTED THAT A SHIP REPLACEMENT AND ACQUISITION PLAN BE DEVELOPED. THAT PLAN IS NOW BEING AGGRESSIVELY EXECUTED AND IS REFLECTED ANNUALLY IN THE NAVY'S SHIP CONSTRUCTION PROGRAM. THE FULFILLMENT OF THIS OCEANOGRAPHIC SHIP PROGRAM WILL RESULT IN A NAVY OCEANOGRAPHIC FLEET OF 21 SHIPS BY 1996. THE CONSTRUCTION OF 13 SHIPS BY 1994 WAS PROGRAMMED AND ALL OF THESE SHIPS WILL BE IN SERVICE BY 1996. AS MENTIONED EARLIER, FIVE OF THESE SHIPS ARE CURRENTLY IN VARIOUS STAGES OF CONSTRUCTION. THE NEXT THREE REPLACEMENT SURVEY SHIPS ARE INCLUDED IN THE PRESIDENT'S BUDGET AND ARE MULTI-PURPOSE OCEANOGRAPHIC

SHIPS.

REPLACEMENT SHIPS ARE REQUIRED BECAUSE IT IS NOT ECONOMICAL TO MODERNIZE AND EXTEND THE SERVICE LIFE OF OUR 1960-VINTAGE SHIPS. BASED ON PAST DETAILED ENGINEERING ASSESSMENTS IT WAS CONCLUDED THAT THE VAST MAJORITY OF OUR SHIPS HAVE SERIOUS DESIGN, SIZE AND OPERATIONAL LIMITATIONS THAT ADVERSELY AFFECT PRODUCTIVITY TO MEET NAVY MISSION REQUIREMENTS. OUR SHIP PROGRAM DOES INCLUDE, HOWEVER, THE MODERNIZATION OF TWO OF THE NEWER AND LARGER UNIVERSITY OPERATED SHIPS TO EXTEND THEIR SERVICE LIVES AND TO SATISFY NEAR TERM GLOBAL COMMITMENTS.

DESIRED SHIP CAPABILITIES: THE NAVY REQUIRES PLATFORMS THAT ARE CAPABLE OF COLLECTING NEW TYPES OF DATA WITH INCREASED ACCURACY TO SUPPORT NEW WEAPON SYSTEM DEVELOPMENT AND OPERATION. THE INTRODUCTION OF LARGER AND MORE CAPABLE OCEANOGRAPHIC EQUIPMENT HAS PLACED ASSOCIATED DEMANDS ON OUR SHIPS FOR INCREASED SHIPBOARD STORAGE AND IMPROVED STABILITY FOR OVER-THE-SIDE HANDLING. THE GROWING REQUIREMENT FOR NEW TYPES OF DATA IN DIVERSE GEOGRAPHIC AREAS AND AT GREATER WATER DEPTHS NECESSITATES SHIPS CAPABLE OF LONGER DEPLOYMENTS AND MULTI-PURPOSE OPERATIONS. THE LATTER IS PARTICULARLY IMPORTANT SINCE WE MUST MAKE EVERY ATTEMPT TO USE OUR

LIMITED ASSETS IN AN EFFICIENT AND EFFECTIVE MANNER.

CHANGING MISSION REQUIREMENTS HAVE ALSO IMPOSED THE NEED FOR OCEANOGRAPHIC DATA COLLECTION IN HIGHER LATITUDES, SUCH AS THE MARGINAL ICE ZONE. OUR SHIPS MUST ALSO HAVE THE CAPABILITY OF CONDUCTING OPERATIONS IN HIGHER SEA STATES. CURRENTLY, WE ARE SEVERELY CONSTRAINED IN OUR ABILITY TO CONDUCT YEAR-AROUND OCEANOGRAPHIC OPERATIONS IN VARIOUS HIGH-LATITUDE AREAS OF IMPORTANCE TO THE NAVY.

BRIEFLY, WE NEED MODERN SHIPS WITH ENHANCED SEAKEEPING AND OCEANOGRAPHIC CAPABILITIES; OUR ACQUISITION PLAN IS STRUCTURED TO PROVIDE SHIPS WITH THESE NECESSARY IMPROVEMENTS. TO MEET THE REQUIREMENTS FOR HIGH SEA STATE AND HIGH LATITUDE OPERATIONS WE ANTICIPATE A SWATH (SMALL WATERPLANE AREA TWIN HULL) CONFIGURED SHIP AND A ICE-STRENGTHENED MONOHULL SHIP. LAST YEAR, THE ASSISTANT SECRETARY OF THE NAVY FOR SHIP BUILDING AND LOGISTICS (ASN S&L), DELAYED THE ACQUISITION OF A LARGE SWATH OCEANOGRAPHIC SHIP TO ALLOW TECHNOLOGY TO MATURE. THE LARGE SWATH SHIP DESIGN HAS MATURED, ADDITIONAL TESTS HAVE BEEN CONDUCTED AND THE NAVY IS PROCEEDING WITH THE PROCUREMENT OF SWATH SHIPS. IN ADDITION, AN ICE STRENGTHENED SHIP IS REQUIRED; SUCH A SHIP WILL ALLOW

OPERATIONS IN THE VICINITY AND AT THE EDGE OF THE ICE PACK BUT WILL REMAIN DEPENDENT UPON U.S. COAST GUARD ICEBREAKERS FOR OPERATIONS WITHIN THE POLAR PACK. SPECIFICALLY, THE SMALLER ICE-STRENGTHENED OCEANOGRAPHIC SHIP WILL BE MORE COST EFFECTIVE TO OPERATE AND WILL BE CAPABLE OF CONDUCTING OCEANOGRAPHIC OPERATIONS IN BOTH MARGINAL ICE AND OPEN OCEAN AREAS.

FORTUITOUSLY, THE COAST GUARD'S INTENTION TO UPGRADE THE SCIENCE CAPABILITY OF ITS ICEBREAKERS WILL EXPAND OUR CAPABILITY TO CONDUCT OCEANOGRAPHIC OPERATIONS FROM AN ICEBREAKER WHILE IN THE DEEP ICE REGIONS.

THE ADVERSE IMPACT OF NOT ACHIEVING THE GOALS OF THIS SHIP PLAN WILL BE AN INABILITY TO MEET NEW EXPANDING AND CHANGING REQUIREMENTS FOR KNOWLEDGE OF THE OCEANS. THE ULTIMATE RESULT WILL BE AN INADEQUATE, INEFFICIENT, AND OBSOLETE OCEANOGRAPHIC FLEET THAT WILL NOT BE ABLE TO MEET NAVY NEEDS.

COMPARISON OF U.S. OCEANOGRAPHIC SHIP CAPABILITIES: A COMPARISON OF U.S. OCEANOGRAPHIC SHIP CAPABILITIES RELATIVE TO OTHER NATIONS IS ALWAYS DIFFICULT SINCE NUMEROUS FACTORS MUST BE CONSIDERED. THESE FACTORS INCLUDE FLEET SIZE, MIX OF SHIPS, TECHNOLOGICAL CAPABILITY, MISSION, REQUIREMENTS, AGE, OPERATING COSTS, AND WHETHER CIVILIAN AND PRIVATE SECTOR SHIPS ARE COUNTED ALONG WITH GOVERNMENT OWNED VESSELS.

IN TERMS OF NUMERICAL SUPERIORITY, THE SOVIET UNION CLEARLY OPERATES THE LARGEST OCEANOGRAPHIC FLEET IN THE WORLD. THE U.S. FEDERALLY SUPPORTED OCEANOGRAPHIC SHIP FLEET NUMBERS ABOUT 60 SHIPS, OF WHICH ABOUT 45 ARE DEEP OCEAN CAPABLE VESSELS. THE SOVIET DEEP OCEAN CAPABLE FLEET IS ABOUT FOUR TIMES AS LARGE AS THE U.S. FLEET. ABOUT HALF OF THEIR SHIPS ARE CIVILIAN OPERATED, BUT ARE OFTEN SUBORDINATED TO THE MILITARY. OF NOTE, IS THE FACT THAT ABOUT THREE QUARTERS OF THE SOVIET FLEET WAS CONSTRUCTED SINCE 1970.

THE SOVIETS ARE WELL KNOWN FOR THEIR SCIENTIFIC WORK IN OCEAN SCIENCES. SHIP NUMBERS, HOWEVER, SHOULD NOT BE USED AS A REQUIREMENT TO MAINTAIN PARITY, OR AS A MEASURE OF TECHNOLOGICAL CAPABILITY OR SUPERIORITY. RATHER, IT IS AN INDICATOR OF THE IMPORTANCE THE SOVIET UNION PLACES ON OCEANOGRAPHY. THE FOLLOWING QUOTE ILLUSTRATES THE THINKING OF THE SOVIET LEADERSHIP ON THIS SUBJECT:

"THE MAJOR NAVIES OF TODAY ARE TECHNOLOGICAL EQUALS. THAT NAVY POSSESSING A SUPERIOR KNOWLEDGE OF THE ENVIRONMENT AND KNOWING HOW TO TAKE TACTICAL ADVANTAGE WILL BE THE VICTOR (ADMIRAL GORSHKOV, CIRCA 1972)."

OUR NAVY'S STRENGTH IN OCEANOGRAPHY IS ITS COHESIVE INFRASTRUCTURE, THE ABILITY TO CONDUCT HIGH QUALITY SURVEYS, TO PROCESS AND CAREFULLY QUALITY CHECK THESE DATA, TO PRODUCE USER-FRIENDLY OCEANOGRAPHIC PRODUCTS FOR THE FLEET, AND FINALLY AND MOST IMPORTANTLY, TO OBSERVE THE PRODUCTS IN USE BY THE FLEET TO GUAGE THEIR USEFULNESS AND LOOK FOR AREAS REQUIRING IMPROVEMENT.

THE NAVY'S OCEANOGRAPHIC SHIP CONSTRUCTION AND REPLACEMENT PLAN AS DEVISED AND IMPLEMENTED WILL RESULT IN A MODERN, FLEXIBLE AND COST-EFFECTIVE FLEET FULLY CAPABLE OF MEETING IDENTIFIED OPERATIONAL AND RESEARCH NEEDS. THIS PLAN IS INDICATIVE OF THE NAVY'S COMMITMENT TO THE PROVISION OF ADEQUATE FACILITIES WITHIN THE NAVY AND IN THE ACADEMIC COMMUNITY FOR DEEP WATER OCEANOGRAPHY. THE NAVY HAS TRADITIONALLY VIEWED ITS OCEANOGRAPHIC SHIPS TO BE NATIONAL ASSETS. THE MAJORITY OF DATA THAT WE COLLECT IN SUPPORT OF NAVAL OPERATIONS IS PROVIDED TO THE NATIONAL DATA

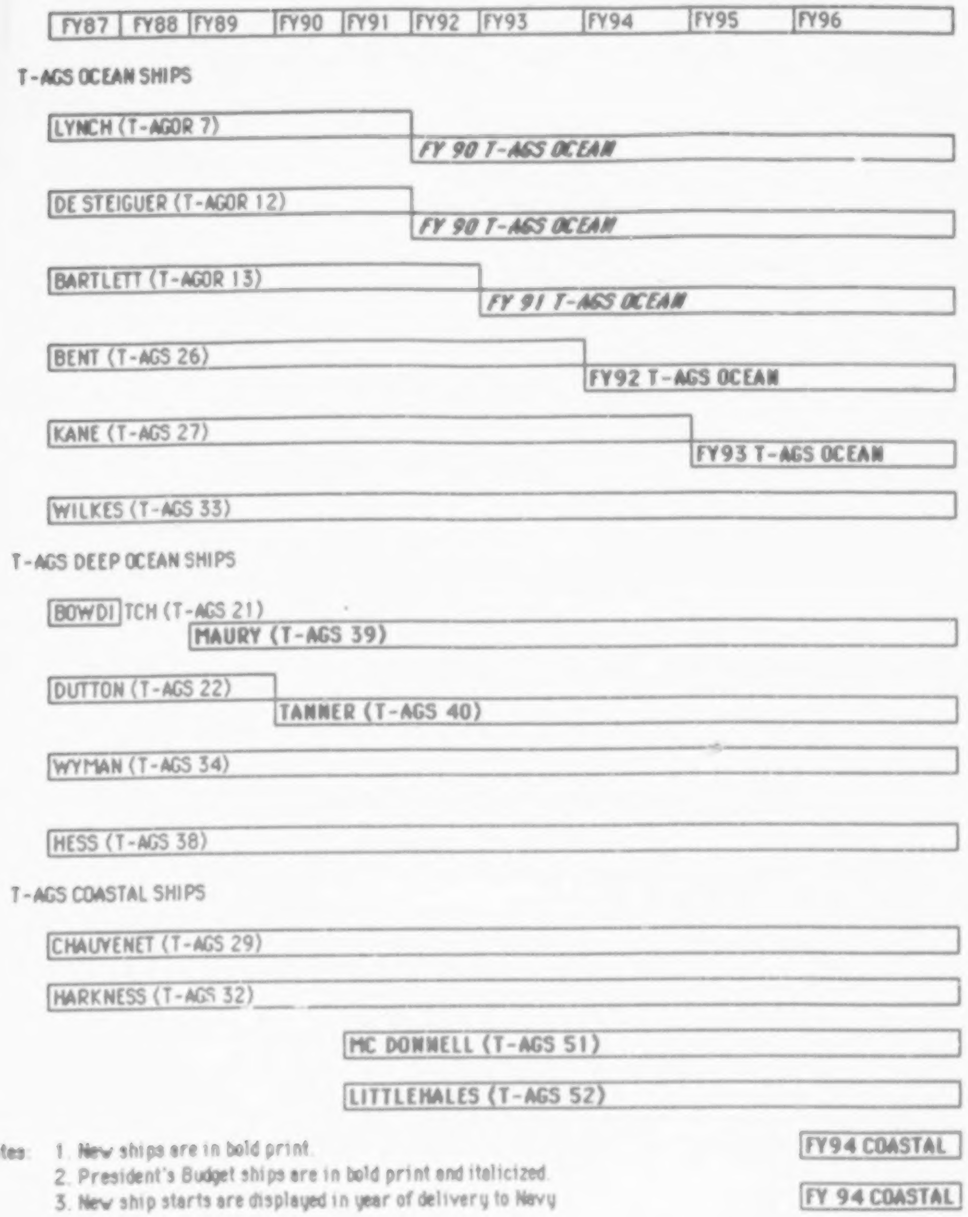
ARCHIVES AND CAN CONTRIBUTE TO SUCH MAJOR PROGRAMS AS GLOBAL CLIMATE CHANGE MONITORING AND ASSESSMENT. OUR SHIP CONSTRUCTION PLAN WILL STRENGTHEN THE NATIONAL CAPABILITY AND ENSURE A MODERN OCEANOGRAPHIC FLEET CAPABLE OF GLOBAL OPERATIONS. INDEED THE NEED TO UNDERSTAND THE WORLD OCEANS HAS NEVER BEEN MORE PRESSING. WE BELIEVE OUR SHIP PLAN PROVIDES THE APPROPRIATE NAVY OCEANOGRAPHIC FLEET NECESSARY TO SATISFY PRESENT REQUIREMENTS, TO KEEP PACE WITH RECURRING NEEDS, AND TO RESPOND TO THE CHANGING NATURE OF THE NAVY'S NEED FOR OCEANOGRAPHIC SUPPORT.

IT MUST ALSO BE NOTED THAT WE HAVE A VESTED INTEREST CONCERNING A VIABLE CIVIL OCEANOGRAPHIC FLEET CAPABILITY. THE NAVY'S OCEANOGRAPHIC PROGRAM BENEFITS FROM THE CONTRIBUTIONS MADE BY THE CIVIL OCEANOGRAPHIC COMMUNITY TO THE NATIONAL DATA BASES. THEREFORE, WE ARE STRONG ADVOCATES OF AN ACTIVE AND MODERN FEDERAL CIVIL OCEANOGRAPHIC FLEET.

I ALSO WISH TO REPORT THAT OUR NATIONAL AT-SEA CAPABILITIES ARE A MATTER OF CONCERN TO THE INTERAGENCY FEDERAL OCEANOGRAPHIC FLEET COORDINATION COUNCIL (FOFCC). IN FEBRUARY I WAS APPOINTED CHAIRMAN OF THIS GROUP. THE FOFCC MEMBERS ARE AGREED THAT WE MUST REVIEW AND ASSESS OUR OCEANOGRAPHIC SHIP REQUIREMENTS AND THE

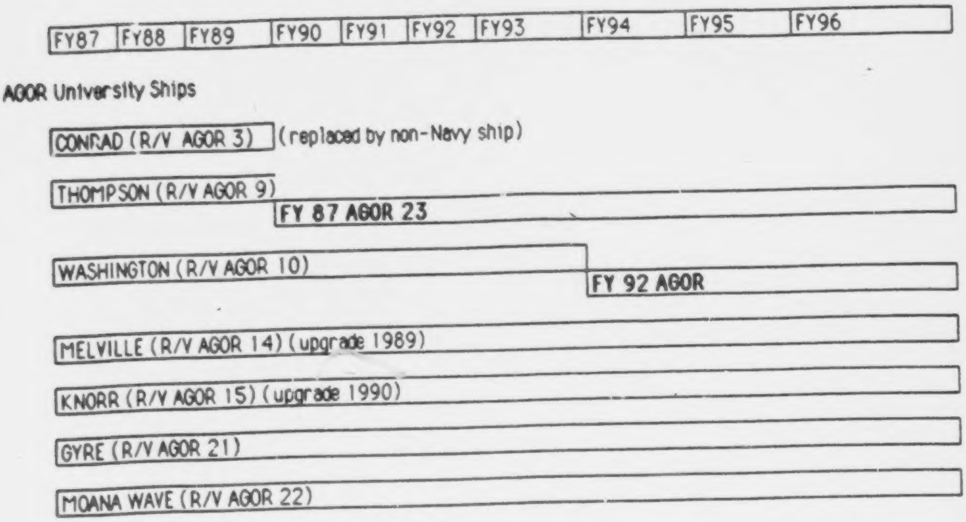
CAPABILITIES NEEDED TO MEET THESE REQUIREMENTS. WE INTEND TO PRESS FORWARD WITH THIS STUDY AND WE WILL BE PLEASED TO KEEP THE COMMITTEE APPRISED OF OUR PROGRESS.

OCEANOGRAPHIC SHIP ACQUISITION and REPLACEMENT PLAN



Notes:
1. New ships are in bold print.
2. President's Budget ships are in bold print and italicized.
3. New ship starts are displayed in year of delivery to Navy

OCEANOGRAPHIC SHIP ACQUISITION and REPLACEMENT PLAN



APRIL 1989

**Shipbuilders
Council of
America**

1110 Vermont Avenue, N.W.
Washington, D.C. 20005-3553
202-775-9060

STATEMENT FOR THE RECORD

BY

JOHN J. STOCKER
PRESIDENT, SHIPBUILDERS COUNCIL

BEFORE

HOUSE MERCHANT MARINE & FISHERIES COMMITTEE
SUBCOMMITTEE ON OCEANOGRAPHY

ON

H.R. 896 & H.R. 897

APRIL 27, 1989

Mr. Chairman, members of the Subcommittee, on behalf of U.S. shipbuilders, ship repairers, and vendors of marine equipment and services, the Shipbuilders Council of America appreciates this opportunity to express its support for H.R. 897, the "National Oceanic and Atmospheric Administration Fleet Modernization Act of 1989", and H.R. 896, legislation requiring that vessel construction and repair contracts of the National Oceanic and Atmospheric Administration (NOAA) be subject to the provisions of the Walsh-Healy Act.

H.R. 897 authorizes $31 million in FY'90 to begin a 10 year modernization, replacement, and expansion program for the NOAA fleet. The total cost of this program is estimated at $440 million. Specifically, the bill would require that 19 vessels be modernized; four obsolescent vessels be replaced; and the construction, charter, or other acquisition of seven new vessels. NOAAs fleet is reaching block obsolescence. It needs to be modernized and expanded and U.S. shipyards definitely need the repair and new construction work. We thank the Committee for including a provision under Section 7 that requires that this work be performed in U.S. shipyards.

The other bill before this Subcommittee, H.R. 896 provides that contracts for the construction or repair of vessels owned or operated by NOAA are subject only to the procurement policies and procedures of the Walsh-Healey Public Contracts Act. Traditionally, the Department of Commerce and NOAA have considered NOAA ship construction and repair contracts to be subject to the Walsh-Healey Act as are all Navy and Coast Guard contracts. In 1985, however, the Department of Labor advised NOAA that repair and construction contracts for its fleet were subject to the

Davis-Bacon Act rather than the Walsh-Healey Act. The Davis-Bacon Act requires that for each contract over $2,000 to which the United States is a direct party for construction, alteration, or repair of public buildings or public works, minimum wages and fringe benefits must be based on prevailing wages for corresponding classes of workers employed on similar projects in the area.

There are two major problems with requiring that NOAA fleet contracts be treated differently from Navy and Coast Guard contracts. First of all, the Department of Labor does not have wage rate determinations for shipyard personnel, who are unlike construction and production workers in other fields for which wage rates have been developed. And, secondly, since most shipyard work is performed for the Navy and Coast Guard, the application of Davis-Bacon to the NOAA fleet would cause shipyards to pay different wage rates to the same employee, depending upon whether the employee was working on a NOAA ship or on another government ship. Because of the havoc this would create in a shipyard, many yards have advised the Council that they would simply not be able to bid on NOAA construction and repair work under the Davis-Bacon Act.

In order to provide parity in contract procedures between NOAA vessels and vessels of the Navy and Coast Guard, enactment of H.R. 896 is necessary.

Thank you, Mr. Chairman, for your consideration of these two important bills. Passage of H.R. 896 and H.R. 897 is essential for NOAA and would provide very needed work to U.S. shipyards.

Shipbuilders
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Appendix A

REGULAR MEMBERS

ADDSCO Industries, Inc.
Post Office Box 1507
Mobile, AL 36601

The American Ship Building Company
Lincoln Pointe Building - Suite 800
2502 Rocky Point Road
Tampa, FL 36607
Tampa Shipyards, Inc., Tampa, FL

Avondale Industries, Inc.
Post Office Box 50280
New Orleans, LA 70150

Bath Iron Works Corporation
700 Washington Street
Bath, ME 04530

Bethlehem Steel Corporation
Marine Construction Group
Bethlehem, PA 18016
Beaumont, TX
Sparrows Point, MD

Capital Marine Corporation
Post Office Box 498
Chester, PA 19016

Continental Maritime Industries, Inc.
Pier 50-54
San Francisco, CA 94107

General Dynamics Corporation
Pierre Laclede Center
St. Louis, MO 63105
Electric Boat Division, Groton, CT
and Quonset Point, RI

General Ship Corporation
400 Border Street
East Boston, MA 02128

Ingalls Shipbuilding, Inc.
Post Office Box 149
Pascagoula, MS 39567

Intermarine U.S.A.
P.O. Box 3045
Savannah, GA 31402

Jacksonville Shipyards, Inc.
750 East Bay Street
Post Office Box 2347
Jacksonville, FL 32203

The Jonathan Corporation
P.O. Box 1839
Norfolk, VA 23501

Marine Hydraulics International, Inc.
543 East Indian River Road
Norfolk, VA 23523

Marinette Marine Corporation
Ely Street
Marinette, WI 54143

McDermott Corporation
P.O. Box 60035
1010 Common Street
New Orleans, LA 70160

Metro Machine Corporation
Box 1860
Norfolk, VA 23501

National Steel & Shipbuilding Company
Harbor Drive at 28th Street
Post Office Box 80278
San Diego, CA 92138

Newport News Shipbuilding
4101 Washington Avenue
Newport News, VA 23607

Norfolk Shipbuilding &
Drydock Corporation
Post Office Box 2100
Norfolk, VA 23501

Northwest Marine Iron Works
5555 N. Channel Avenue
Portland, OR 97217

Peterson Builders, Inc.
101 Pennsylvania Street
Post Office Box 47
Sturgeon Bay, WI 54235

Robert E. Derecktor of
Rhode Island, Inc.
Coddington Cove
Middletown, RI 02840

Southwest Marine, Inc.
Foot of Sampson Street
Post Office Box 13308
San Diego, CA 92113
San Francisco, CA
San Pedro, CA

Textron Marine Systems
6800 Plaza Drive
New Orleans, LA 70127

Todd Shipyards Corporation
Corporate Office
1102 S.W. Massachusetts
Seattle, WA 98134
Galveston, TX; Los Angeles, CA

ALLIED INDUSTRIES MEMBERS

ALCOA/TRE
P.O. Box 11030
3030 South Red Hill Avenue
Santa Ana, CA 92711

Bird-Johnson Company
110 Norfolk Street
Walpole, MA 02081

CENTRICO, INC.
100 Fairway Court
Northvale, NJ 07647

Colt Industries, Inc.
1901 L Street, NW
Washington, DC 20036

Combustion Engineering, Inc.
Prospect Hill Road
Windsor, CT 06095

Dresser Pump Division
Dresser Industries, Inc.
401 Worthington Avenue
Harrison, NJ 07029

Eaton Corporation
Cutler-Hammer Products
21 Governors Court
Baltimore, MD 21207

General Electric Company
1331 Pennsylvania Avenue, NW
Washington, DC 20004

Hopeman Brothers, Inc.
Post Office Box 820
Waynesboro, VA 22980

IMO Delaval, Inc.
3450 Princeton Pike
Post Office Box 6550
Lawrenceville, NJ 08648

Jamestown Metal Marine Sales, Inc.
4710 Northwest Second Avenue
Boca Raton, FL 33431

Jered Brown Brothers, Inc.
1300 Coolidge
Post Office Box 2006
Troy, MI 48007

Lake Shore, Inc.
Post Office Box 809
Iron Mountain, MI 49801

Raytheon Service Company
Suite 1500
1215 Jefferson Davis Highway
Arlington, VA 22202

Sperry Marine, Inc.
Aerospace & Marine Group
Route 29 North
Charlottesville, VA 22907

SPD Technologies
13500 Roosevelt Boulevard
Philadelphia, PA 19116

Westinghouse Electric Corporation
Hendy Avenue
Sunnyvale, CA 94088

York International Corporation
631 South Richland Avenue
Post Office Box 1592
York, PA 17405

AFFILIATE MEMBERS

The Bingham Group
Two Crystal Park - #600
2121 Crystal Drive
Arlington, VA 22202

Colton & Company
Suite 1020
600 New Hampshire Avenue, NW
Washington, DC 20037

PacOrd, Inc.
2700 Hoover Avenue
National City, CA 92050

Poten & Partners, Inc.
711 Third Avenue
New York, NY 10017

Seacoast Electric Supply Corporation
Station Plaza
Rye, NY 10580

NAVAL ARCHITECT MEMBERS

JJH Inc.
1101 Kings Highway North
Cherry Hill, NJ 08034

John J. McMullen Associates, Inc.
One World Trade Center
New York, NY 10048

M. Rosenblatt & Son, Inc.
350 Broadway
New York, NY 10013

ASSOCIATION MEMBERS

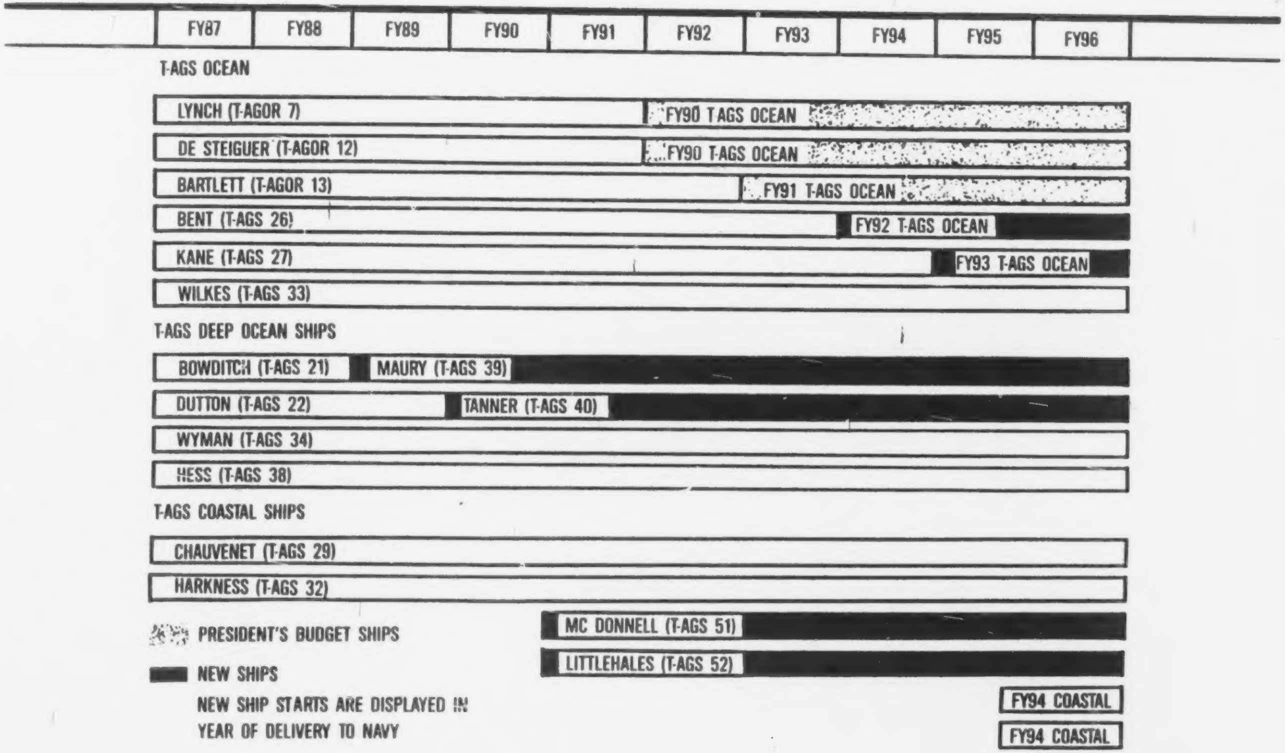
New York and New Jersey Dry Dock Association
c/o Rodermond Industries
One Beard Street
Brooklyn, NY 11231

South Tidewater Association of Ship Repairers, Inc.
Post Office Box 5637
Chesapeake, VA 23324

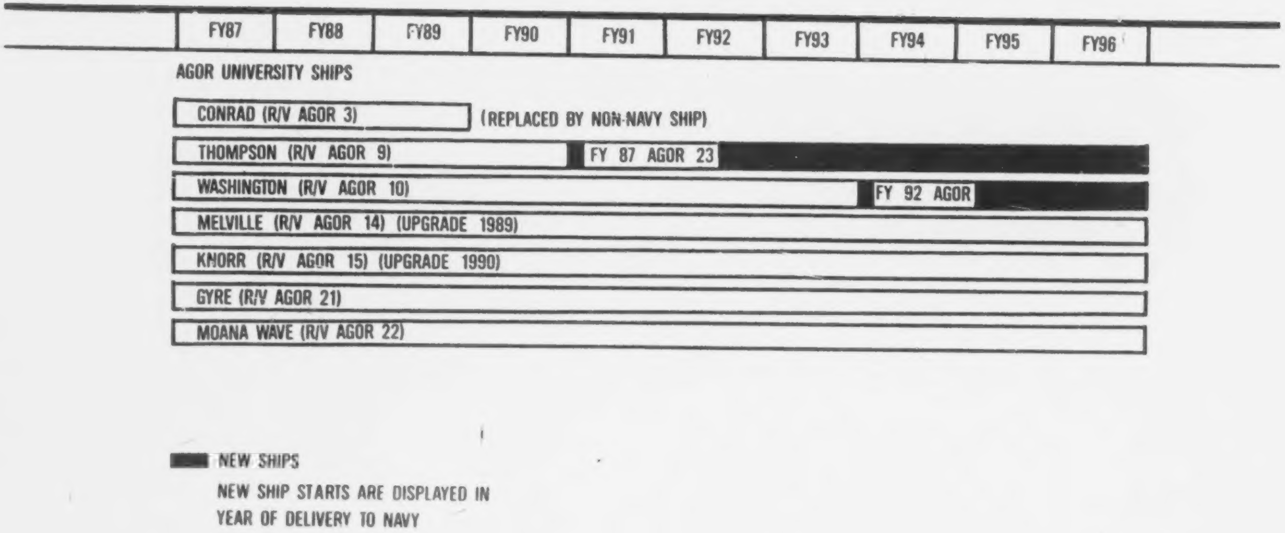
NAVY'S OCEANOGRAPHIC SHIP FLEET

- SECRETARY OF THE NAVY (1984) DIRECTED THE DEVELOPMENT OF A MODERNIZATION/ACQUISITION SHIP PLAN.
- SHIP PLAN DEVELOPED AND THE CHIEF OF NAVAL OPERATIONS APPROVED.
- PLAN IMPLEMENTED AND ON TRACK.
- MINOR ADJUSTMENTS ACCOMMODATED DURING PLAN EXECUTION.
- NEED CONTINUED STRONG CONGRESSIONAL SUPPORT.

OCEANOGRAPHIC SHIP ACQUISITION AND REPLACEMENT PLAN



OCEANOGRAPHIC SHIP ACQUISITION AND REPLACEMENT PLAN



NAVAL OCEANOGRAPHY

FY90/91 BUDGET SUMMARY

1. **Ship Construction (SCN)**. Naval Oceanography has been executing a 10 year oceanographic fleet modernization program. Principally a replacement effort, it focuses on replacing aging and technologically inadequate ships at end of service life (ESL).

FY90 requests two replacement ships at $88M total. These ships, based on a design already in construction, are solidly priced. They replace two 1960's vintage general purpose oceanographic survey ships which will reach ESL. An additional "oceanographic" ship is identified in the FY90 request -- $190M replacement for USNS MIZAR is not part of the general oceanography program.

FY91 requests $42M for a third replacement oceanographic ship. This will be an option on the FY90 two ship contract.

These ships will keep the Navy oceanographic fleet at 14 ships. The Soviet Navy has 150 military oceanographic ships, as many more as are Naval-subordinated. Ships of this size provide the bulk of new construction opportunity for small U.S. shipyards.

2. **Procurement (OPN)**. Meteorological Equipment funds will pay, in these years, principally for procurement of satellite antenna/ receiver equipment (SMQ-11) to gather information from environmental satellites by capital ships at-sea and at ASW related shore sites, and for tactical oceanographic information systems (TESS) for use at sea and in tactical decision centers ashore. $20M/$36M.

3. **Procurement (OPN)**. Oceanographic Support Equipment will purchase equipment used in the Naval oceanography production centers, in regional operational facilities collocated in major fleet homeports, and onboard oceanography ships. Largely cyclic replacement of sea going equipment and replacement/update of antiquated information analysis and distribution equipment. $25M/18M.

4. **Research and Development**. A set of seven Engineering/Advanced Development 6.3/6.4 efforts to better understand the ocean environment and apply that understanding to weapons development and employment. Total R&D effort is about $50M; a prudent 10% of total oceanography funding.

0603207N	Air/Ocean Tactical Applications	$11M/12M
0603704N	ASW Oceanography	$9M/9M
0603708N	ASW Signal Processing (Acoustic Propagation Prediction= $7M)	$20M/24M
0603785N	ASW Environmental Acoustic Support	$17M/17M
0604218N	Air Ocean Equipment Engineering	$2M/3M
0604704N	ASW Oceanographic Equipment	$1M/1M
0305111N	Weather Service (Satellite Data Processing Systems)	$1M/1M

5. **Operations and Maintenance (O&MN)**. Oceanography is embedded in the total Navy request. Principally funds oceanography ship operation, civilian salaries and day-to-day facility maintenance and operations costs. Because nearly all oceanography O&MN funds are "fixed costs" associated with ship operating expenses, civilian salaries and maintenance, flexibility to absorb budget reductions in this appropriation virtually does not exist. Basic program vitality depends on fiscal health in O&MN. Approximately $230M in FY90/$253M in FY91.

6. **Military Construction (MILCON)**. Funding in FY90 covers construction costs to house a new CLASS VII supercomputer for the Fleet Numerical Oceanography Center in Monterey CA ($.75M). Funding in FY91 supports the construction of a new facility for the Naval Oceanography Command Facility at the Stennis Space Center, MS ($1.7M).

NOTE: All funding figures are approximate pending development of detailed FY90/91 Bush budget documentation.

NEWS RELEASE

OFFICE OF ASSISTANT SECRETARY OF DEFENSE
(PUBLIC AFFAIRS)
WASHINGTON, D.C. - 20301
PLEASE NOTE DATE

No. 138-89
697-5131 (Info)
697-3189 (Copies)
697-5737 (Public/Industry)

IMMEDIATE RELEASE March 30, 1989

NAVY ANNOUNCES DECISION ON CONTROLS FOR SENSITIVE SEAFLOOR MAPS

The Navy has released its position on controls for data and technology used to produce precise ocean bottom maps. The precise data has sensitive military applications, and controls were considered for all civil sources of the maps. The final position is based on an extensive threat assessment.

Most data from the U.S. Exclusive Economic Zone (EEZ) can now be released for public use, according to a Navy letter to Dr. William Evans, Under Secretary of Commerce for Oceans and Atmosphere. Only areas associated with SSBN (ballistic missile submarine) egress routes will remain controlled. The EEZ surveys by Commerce's National Oceanic and Atmospheric Administration, have been classified since a January 1985 White House memo prohibited their release without Defense Department approval.

Other aspects of data control include:

* High-resolution bathymetry (HRB) data collected by the Navy to support military operations will remain classified.

* No review or security classification will be imposed on university HRB survey proposals requesting funding from the government.

Commercial technology to collect HRB data will continue to be export controlled as a Munitions List item. This will allow U.S. exports only to countries that will guarantee no re-export to East Bloc nations. Language in the export regulations will be clarified to improve understanding and compliance.

Universities will also be advised of their responsibilities under export law when using Munitions List oceanography technology in cooperative research with foreign scientists.

-END-

NATIONAL RESEARCH COUNCIL
COMMISSION ON ENGINEERING AND TECHNICAL SYSTEMS
2101 Constitution Avenue Washington, D.C. 20418

MARINE BOARD

OFFICE LOCATION:
Georgetown Facility
Room GF 250
2001 Wisconsin Avenue, N.W.
Telephone (202) 334-3119
Telex 248664 NASWUR

May 11, 1989
MB-89-359

The Honorable Dennis M. Hertel
U. S. House of Representatives
Committee on Merchant Marine and Fisheries
Room 1334, Longworth House Office Building
Washington, D.C. 20515-6230

Dear Congressman Hertel:

I am pleased to provide answers to some of the questions which have been asked of me.

1. Could you give us some examples where the needs for the NOAA fleet are expanding?

The Marine Board committee study stated that NOAA's role will be important particularly in national efforts to pursue global ocean research, coastal oceanography and the study of estuaries, fisheries resource assessment, and deep sea research. Oceanographic research, from a global perspective, must expand to provide the nation with a synoptic view of the ocean, including its role in climate and ocean productivity.

A greater understanding of the Arctic and Antarctic regions is critical, though currently limited by vessel capability. See also pages 9-13 of the NRC report (copy attached).

2. Why do you think the Administration has been so reluctant to invest money in the NOAA fleet? What are the consequences for NOAA missions and oceanographic research if money is not spent to replace and upgrade the NOAA fleet?

As the other witnesses have testified, the U. S. Navy and the UNOLS are making necessary investments to maintain and upgrade the segments of the national oceanographic fleet, which they are responsible for. To date, the NOAA has not received funding for a comparable effort. The logical consequence of these trends is the decline of NOAA's capability to support oceanographic research and other activities, such as natural resources damage assessment. In time, NOAA's leadership would be eclipsed. NOAA's failure to mount strong justification for replacement/upgrading of its fleet is inexplicable, except as a reflection of the severe budget restraints, which have been imposed on the Agency.

3. Why do you think NOAA has not undertaken the necessary study

The National Research Council is the principal operating agency of the National Academy of Sciences and the National Academy of Engineering to serve government and other organizations

to define the characteristics of an idealized fleet? How long would such a study take? How much money would it cost?

Although I am unable to state why NOAA has not completed a necessary study to define and justify the characteristics of an idealized fleet, such a study to be effective would require a minimum of a year and at least a half million dollars in money and/or manpower. Such a study must be ongoing and continuous so as to be current for budget and planning purposes.

4. What do you know about NOAA's "continuing planning process" to determine its future ship requirements? Is this planning process adequate to determine NOAA's future ship needs?

The existing planning process seems to me to be directed to the justification and allocation of existing ship time (see page 8 of NRC report). The planning process recommended by the NRC would be broader. It would address the allocation of existing ship time, but would also provide a basis for determining requirements for new cost effective alternatives for obtaining ship services.

From my limited knowledge of NOAA's "continuing planning process" my opinion is that the Admiral in charge of the fleet should have the responsibility and authority to determine and justify the requirements for ship services. The projected number and type of ship days at sea should then be agreed/disagreed by the various assistant administrators and then presented to the Administration for approval and thence forwarded up the chain of command. Again, it is essential that these requirements for ship services be considered in the context of national needs and include alternatives for obtaining ship services.

5. Based on your experience as oceanographer to the Navy, what specific recommendations do you have for NOAA to develop and implement a fleet replacement and modernization plan?

Based on my prior experience as Oceanographer of the Navy, some individual (not group or committee) must have the responsibility and authority to determine, state, and justify requirements for ship services, including alternatives. The result of the process must be "signed off" by the users and forwarded up the "chain of command" for approval and directed budgeting and implementation.

6. What were some of the recommendations the marine board made to NOAA on ship chartering? How has NOAA responded to these recommendations? Why hasn't NOAA undertaken a study of its ship chartering requirements?

Here is a list of the findings and recommendations of the NRC committee (pages 55-57 of the NRC report):

Finding: The NOAA Fleet represents a significant and unique part of the total Federal Oceanographic Fleet. As such, decisions regarding its future should be made in the context of total national needs.

RECOMMENDATION: Policy decisions concerning the future of the NOAA Fleet should ensure that the capability to support national interest at sea is strengthened, not diminished.

Finding: Ocean research and data acquisition will most probably increase as a consequence of the 1983 declaration of an Exclusive Economic Zone (EEZ) extending 200 miles offshore, the increased use of marine resources, the national commitment to global ocean investigation, and the level of future NOAA activities in bathymetry, fisheries, and oceanography. The NOAA Fleet will play an important role in accomplishing this task.

RECOMMENDATION: NOAA should take action to ensure that it will be able to provide the nation with the required capability to perform marine resource assessment and oceanographic research in the future.

Finding: Industry and other governmental agencies have used chartering to obtain sophisticated and cost-effective oceanographic services. In selected program areas, NOAA potentially could use chartering to comparable advantage to help to meet its ship needs and to bring new and more sophisticated vessels into national service. Other program areas are not conducive to chartering.

RECOMMENDATION: In selected program areas, NOAA should establish and implement policy that encourages the acquisition of short- and long-term ship services through a variety of chartering mechanisms.

RECOMMENDATION: NOAA should commission the conduct of a study to define the characteristics of an idealized fleet to meet present and projected ship services needs. The results of this study should serve as the basis for the modernization of the NOAA Fleet and the implementation of a program for chartering ship services.

RECOMMENDATION: NOAA should prepare a carefully designed request for proposal (RFP) for chartering ships to service one or more mission areas.

It is the committee's belief that bathymetric surveying of the EEZ should be offered to interested contractors as promptly as a carefully drawn RFP can be prepared and multiyear chartering authorization can be obtained. Only through an RFP will definitive information be developed on chartering costs and vessel availability. Once the government has definitive information on contractor costs and services and its own costs and requirements, it can make an informed decision about contracting for vessel services.

Finding: The committee has attempted to obtain data to compare the cost of services of contractors to NOAA-performed oceanographic services. The data from respondents were inconclusive due primarily to lack of specificity in standards and tolerances provided for each mission area. The committee believes that only through the issuance of a carefully prepared RFP, which would include incentives for high performance by contractors and clear intent to make a contract award, will competitive and reliable cost data be obtained.

RECOMMENDATION: NOAA should issue a full RFP for EEZ bathymetric surveying and convey a serious intent to award a long-term contract in order to obtain accurate cost data. This should be undertaken by NOAA as an experimental program(s) with a clear recognition that funds must be set aside to implement this recommendation.

Finding: NOAA is justifiably apprehensive about ensuring contractor responsiveness and the quality of prducts produced.

RECOMMENDATION: NOAA should accept the direct responsibility for defining its expectations in standards and tolerances that become part of any RFP and contract documents that may result from a successful solicition. Other federal agency successes and failures should be fully understood.

Finding: For many chartering alternatives, long-term charters are more cost-effective and attractive than short-term charters. NOAA's past chartering experience has not included long-term contracting. It is not clear to the committee that NOAA is able to enter into long-term multiyear contracts for ship charters and scientific services. Other agencies appear to have such authorization.

RECOMMENDATION: NOAA should establish agency policy and procedures to enter into long-term multiyear contracts for ship charters and related scientific services.

Finding: The legal implications pertaining to nautical charts were not examined in detail by this committee. However, the committee understands that the NOAA has the responsibility to support its nautical charts in litigation.

RECOMMENDATION: Hydrographic survey ship operations for the purpose of preparing nautical charts should not be chartered out until the implications are fully understood.

Finding: Problems appear to occur most frequently where technical procurement documents are prepared in a central procurement office by individuals not intimately familiar with the tasks to be accomplished or services to be rendered at sea.

RECOMMENDATION: NOAA should establish a technical capability within its procurement organization that will be full cognizant of and sympathetic with the needs of scientific personnel.

One would have to defer to NOAA as to why or why not recommendations were or were not followed through, including the recommeded ship chartering experimental program.

7. Are the provisions in H. R. 897 adequate for NOAA to enter into long-term ship charters? Lease-purchase arrangements?

Although I am not a lawyer, there do appear to be some inconsistencies in H. R. 897 SEC 3 Purposes, purpose (4) appears clear to me and is directly responsive to finding #6 of the Marine Board study. However, subsection (2) (B) of Sec 7 "Contract Authority" excepts vessels in contracting for the lease of property. The committee might benefit from obtaining the opinion of counsel concerning the additional authority, which NOAA needs.

8. What is your opinion of the new SWATH ships and their capability to support oceanographic research?

I am excited about the inherent possibilities of the new SWATH ships to effectively support physical and accoustical oceanographic research more effectively. I do, however, defer to the Navy as to the current operating experience and any limitations as to size and configuration.

9. Is it solely budget restraints that is keeping NOAA from undertaking a fleet replacement plan, or something else?

Budget restraints certainly play a significatant role in any capital asset expenditure and force a prioritization at the national level. If one agrees that several agencies contribute to oceanography, then any administration should look at how, in their own mind, each agency contributes to an agreed upon national goal. This would demand that, to quote the Marine Board report, "...decisions regarding its [NOAA] future should be made in the context of total national needs." Clearly, a vision of the future and a plan for getting there are needed. In summary, it is my feeling that you, Mr. Chairman, are headed in the right direction by looking into the total Federal Oceanographic Fleet to determine what should be done to ensure that the NOAA Fleet has the capability to support the national interest at sea and is not diminshed.

Sincerely,

Edward Snyder

J. Edward Snyder, Jr.
Member, Committee on
Alternative Strategies
for Obtaining Ship
Services
Member, National Academy
of Engineering

ANSWERS TO QUESTIONS ASKED BY THE SUBCOMMITTEE ON OCEANOGRAPHY AND GREAT LAKES ABOUT THE CONDITION OF THE NOAA FLEET

Question: 1. How would you assess the condition of the NOAA fleet based on your survey of users?

Answer: Generally, the ships are in good condition for their age. However, the average age of the ship's is approaching 25 years and the majority of them will become obsolete in the 1990's according to criteria cited for the useful life of such ships by the Marine Board of the National Academy of Sciences and the Federal Oceanographic Fleet Coordination Council. The users we contacted believe that the ships and their instrumentation need to be upgraded so that the fleet can carry out its future mission requirements.

Question: 2. What recommendations do you have for NOAA and this Subcommittee to consider in developing a plan for upgrading the NOAA fleet?

Answer: NOAA needs to adopt a plan to modernize the fleet. This plan should consider alternative sources of fleet support, such as long-term charter arrangements, to meet future mission requirements. Also, because of the Federal budget situation, NOAA needs to make priority decisions about the relative importance of short-term upgrade needs of instrumentation and equipment and long-term replacement of the ships.

Question: 3. What areas of the fleet and equipment would you give priority attention?

Answer: Users most often cited the need to upgrade the space available for laboratories and the storage of scientific samples and equipment. Many users also said the ability of the ships to remain at sea for long periods of time needed to be upgraded. On the equipment side, users most often cited the need to upgrade winches, scientific instruments such as depth sounding equipment, and computers.

Question: 4. Do you agree with the conclusion of the Ad Tech. study that while the fleet is well maintained, it is quickly facing block obsolescence?

Answer: Yes. The average age of the ships is approaching 25 years and ranges from about 9 years to 46 years. The useful life of such ships is about 30 years as cited by the Marine Board of the National Academy of Sciences and the Federal Oceanographic Fleet Coordination Council. Nineteen of the ships were built in the 1960's and should be replaced in the 1990's according to this useful life criteria.

Question: 5. Do you know what the consequences are for NOAA and the users of the NOAA fleet if the recommendations of your and the Ad Tech study are not soon implemented?

Answer: Fleet users told us that a shortfall in fleet support would affect NOAA's ability to meet future program responsibilities in fisheries, ocean assessments and mapping and charting. They also told us that a shortfall would affect the various agencies and groups, both public and private, that rely on their research in these program areas. If NOAA does not adopt a realistic modernization plan and budget strategy for obtaining necessary resources, its ability to carry out its research programs over the long term will decline.

Question: 6. Can you tell us approximately how much money is needed to enable NOAA to carry out the recommendations of your and the Ad Tech studies?

Answer: We did not attempt to make a cost determination, but we believe that this should be an integral part of NOAA's modernization plan. The AD Tech study did estimate upgrade and replacement costs including about $85 million to replace 4 ships and about $83 million to upgrade ships.

Question: 7. Do you have any concerns for the safety of the crew and NOAA scientists if the ships are not upgraded and/or replaced?

Answer: According to NOAA personnel responsible for the maintenance of the fleet, safety is the first priority of its maintenance program. Safety related problems could increase as the ships age. We noted that the Ad Tech study did indicate several safety concerns such as obsolete fire detection systems onboard certain ships. NOAA personnel told us that these systems are still in working condition, but are being replaced as they break.

Question: 8. When do you expect to complete your report?

Answer: We hope to issue our report by August.

Question: 9. What advantages, if any, do you see from NOAA's being able to contract for ship repairs under the Walsh-Healey Act instead of Davis-Bacon?

Answer: We did not specifically look at the advantages of one act over the other. GAO has issued reports in the past that recommended that the Davis-Bacon Act should be repealed because, among other reasons, it is inflationary and results in unnecessary costs.

Response to the Questions of the Subcommittee on Oceanography and Great Lakes
April 27, 1989
by Captain Gilbert L. Kraine USCG (Ret.)
of Advanced Technology, Inc.

1. Do you know why NOAA has not adopted the recommendations in your study? Is it strictly for budgetary reasons?

1. I have not been a party to any discussions NOAA has had regarding the adoption of our recommendations and so cannot answer the question. However, everything we have been told indicates that the personnel responsible for the fleet agreed with our conclusions and recommendations and were pleased with the study. Of course, I am aware of the increasingly tight budgetary constraints NOAA has faced since the study was concluded.

2. What are the consequences, financial or otherwise, for NOAA if it does not implement your recommendations?

2. If NOAA does not implement our recommendations the ships will continue to deteriorate and slip further into block obsolescence. Operational performance and reliability will decrease and the cost of piece meal maintenance and repairs will increase. The cost of each rehabilitation will increase due to the amount of work which will be required. Eventually, the ships will reach the point when rehabilitation is no longer a cost beneficial solution and outright replacement will be required.

3. Should we be concerned about the safety of the crew and scientific personnel if NOAA does not begin the upgrades you have recommended?

3. At no point did we intend to imply that any NOAA ship was a threat to the safety of the crew and scientific personnel. However, going to sea has always entailed a degree of risk and going to sea in an older ship is inherently riskier. That risk will no doubt increase with time if the upgrade program is not carried out.

4. When should NOAA start to replace the four ships you have recommended for replacement?

4. We proposed a replacement plan which would begin with the design of replacement for the ALBATROSS IV in FY 1990 and construction in 91 and 92. The TOWNSEND CROMWELL was the second ship with construction in 93 and 94 as a Sister Ship to the ALBATROSS IV replacement. The JOHN N. COBB would be replaced in FY 93-95. The replacement for the final ship the SURVEYOR, would be designed in FY 95 and 96 and constructed in 97 to 99. A faster replacement program is possible but we tried to balance funding requirements and engineering workloads for an even paced, rational program. I would still like to see NOAA start the design of the ALBATROSS IV replacement in FY 90.

5. Why do you recommend a "go slow" policy on NOAA's using SWATH technology?

5. I did not intend to recommend a "go slow" policy by NOAA on the use of SWATH technology as much as raising a warning that new technologies bring new problems. We have been designing, operating and maintaining conventional ships for many years and yet we are still learning. With SWATHs I am sure we will have some unexpected problems. I think it is prudent for NOAA to allow the Navy to go first, as they are doing, to find and solve at least some of the problems before NOAA has them too. My main concern however was the implication that a SWATH could be substituted for a conventional ship at less cost and the NOAA ship construction and operating funds could be reduced now. That, I feel, is fallacious. SWATH technology may provide some operating advantages, but I doubt that reduced cost will be one of them, at least in the initial stages.

6. Do you have any opinions on NOAA's leasing vessels as opposed to purchasing them outright?

6. On the subject of leasing vessels vs purchasing them outright, either way NOAA is going to pay for the cost of the ship. With leasing however, NOAA may end up paying several times the cost. Right now, the marine industry is depressed and prices for new construction or existing ships are highly competitive. If NOAA buys a new or existing ship now, they will pay the acquisition cost once, and operate the ship for 30 to 40 years. If NOAA leases a ship, the owner will have to charge enough to amortize the cost of the ship. Whatever lease term NOAA selects, I doubt that it will be in the 30 - 40 years range. When the lease term runs out, the owner will be free to adjust the terms. If there is a high demand at that point, the owner would obviously lease to the highest bidder. NOAA will either have to pay the then current price, or start a ship construction program in a high cost period, or do without a fleet.

7. Even though you weren't asked to look at scientific equipment, do you have any opinions on whether this equipment needs upgrading, too?

7. Even though we weren't tasked to look at scientific equipment, we did observe the state of some of the equipment. I believe that NOAA should also embark on an extensive upgrade program for the scientific equipment aboard the ships. I believe that NOAA is planning a scientific equipment upgrade component with the vessel upgrade plan.

8. Do you agree with the assessment made by the GAO on the lack of adequate winches, deck space, laboratory space?

8. I have not seen the GAO study and therefore am not knowledgable about their assessment of the lack of adequate winches, deck space, and laboratory space. The age and condition of the winches was addressed in the ATI study. Almost without

exception, the winches should be replaced. As to deck space, that varies by ship. Some ship classes have adequate deck space for their mission while some do not. Of course, more deck space, like any other resource, is always desirable. The same remarks apply to the laboratory space size. In regards to the condition of the laboratory spaces, major laboratory space upgrades were recommended in our study.

9. What would NOAA have to do to update your study? How much time and money?

9. That is a difficult question to answer. In 1987, ATI was a master contractor under a NOS Quick Reaction Task Order Contract. We won this task in competition with three other Master Contractors. ATI is now a master contractor under a follow on NOAA QRTO Contract. NOAA could use that as a vehicle for another competitive procurement, but ATI might not win the task. The cost and time to update the study would vary with the contractor who is awarded the task, the depth of review that NOAA requires and the format of the plan. We would recommend that NOAA have the updated plan placed on a computer based program management system to allow for future updating throughout the 10 year period of the program.

Suggested Additional Question

10. Do you consider the NOAA Fleet to be obsolete?

10. No. As we said in the study, the NOAA fleet is aging and approaching block obsolescence, but is still a viable, operationally, effective resource.

Response to the Question of Congressman Robert W. Davis,
Subcommittee on Oceanography
April 27, 1989
by Captain Gilbert L. Kraine USCG (Ret.)
of Advanced Technology, Inc.

1. Your assessment of the costs to replace aging NOAA vessels over a 27 year period arrived at a figure of $426 million in 1987 dollars. If the time period for replacement and upgrading were speeded up to 10 years, what would be your estimate of the costs in current dollars?

1. The estimate of $426 million in 1987 dollars to replace the NOAA vessels over a 27 year period was for a total one for one replacement program. It did not include the upgrade costs estimated at $83 million, but did include the 4 ship replacement costs of $85 million. If the vessel replacement program were compressed into a 10 year program, the upgrade program requirements would decrease. To provide an accurate estimate of the reduced upgrade costs would require a careful analysis. However, I would estimate that a $25 to $30 million upgrade program would suffice to maintain the NOAA vessel capability until they are replaced by the new vessels.

These estimates are in 1987 dollars. The MARAD Shipbuilding Cost Index indicates that costs in the industry increased from 1987 to 1988 at about 4.8%. Using this factor for 1989 as well, it is estimated that the above costs should be increased by 10% for 1990 dollars. Therefore, the complete fleet replacement program with the reduced upgrade program is estimated at $500 million in 1990 dollars.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Washington, D.C. 20230

OFFICE OF LEGISLATIVE AFFAIRS

July 18, 1989

Honorable Walter B. Jones
Chairman, Committee on Merchant
Marine and Fisheries
U.S. House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Thank you for your letter concerning NOAA's Fleet Modernization Plans. The answers to the Committee's questions raised as a result of the hearing on April 27 are enclosed.

As you are aware, NOAA, in cooperation with other agencies through the Committee on Earth Sciences of the Federal Coordinating Council for Science, Engineering and Technology, has significant new responsibilities as a result of global climate change programs, coastal ocean programs, arctic research programs, and programs involving cooperation with and use of the planned Earth Observing System. All these programs will require significant ship support capability. The Administration must review NOAA's role in these programs and develop a plan to meet ship support requirements in the most cost-effective and efficient manner possible.

To date, our planning activities have involved a service life extension analysis for the existing fleet and development of specific instrumentation requirements for the NOAA Fleet. Our next stage will be to develop an overall NOAA Fleet Plan that addresses NOAA's currently emerging responsibilities and reviews vessel options, vessel operational efficiencies, and other platform possibilities open to NOAA. After the plan is reviewed by the Department of Commerce and the Office of Management and Budget, it will be forwarded to the Congress.

I appreciate the Committee's continued interest in NOAA's programs and in the NOAA Fleet.

Sincerely,

Lori Gribbin

Lori Gribbin
Director

Enclosure

ANSWERS TO QUESTIONS SUBMITTED BY CHAIRMAN WALTER B. JONES FOR THE RECORD OF THE HEARING BEFORE THE SUBCOMMITTEE ON OCEANOGRAPHY AND GREAT LAKES ON THE NOAA FLEET, APRIL 27, 1989

1. **How much money does the Administration have in the FY 1990 budget for fleet replacement and rehabilitation?**

Former President Reagan's proposed FY 1990 Marine Services budget included $0.0M for vessel replacement and $2.85M for vessel rehabilitation. On February 19, 1989, President Bush announced his budget plan, which includes specific new initiatives and an all-other freeze category. The Marine Services budget falls into the freeze category; therefore there is no specific amount endorsed by the President. Funding for the program will be determined through negotiations between the Administration and Congress.

2. **Has NOAA examined the programmatic consequences of the Administration's FY 1990 proposal to lay up six ships, reduce 66 staff positions, and reduce days-at-sea on seven more ships? What "lower priority" missions have been cut as a result of these reductions?**

NOAA has reviewed the programmatic requirements for vessel support in FY 1990 and will assign the available vessel time to the highest priority needs determined by the Fleet Allocation Council. Lower priority projects and days at sea will be cut from the following programs: Equatorial Pacific

Ocean Climate Program; Sea Floor Venting Process; Antarctic Marine Living Resource Program; Fisheries/Oceanography Cooperative Investigation; Radiatively Important Trace Species; Status and Trends; Fisheries Resource Assessments in the Gulf of Mexico, Alaska, Hawaii, Northeast Coast; and Porpoise Surveys.

3. Why has NOAA not developed a long-term fleet replacement and upgrade plan in response to the study done by Advanced Technology, Inc.? Does NOAA agree with the conclusions of that study, that the fleet is facing serious block obsolescence and needs to have four vessels replaced and the rest significantly upgraded? If not, why not?

Management planning for the NOAA Fleet is a continuing process. The Administration is developing a fleet management plan. However, it is currently reviewing the Advanced Technology report and has not yet taken a position regarding its findings.

4. What in your opinion would be the ideal characteristics of a modern NOAA fleet -- how many ships, what types, what equipment, etc.?

The number of vessels, mix of vessels, and equipment needs

The number of vessels, mix of vessels, and equipment needs will be determined by user requirements and a rigorous analysis which reviews all options for providing vessel support.

5. **Is NOAA's opposition on H.R. 897 based on money or lack of flexibility, or both? What type of authority does NOAA need to enter into the type of long-term contracts it wants?**

NOAA opposes H.R. 897 because it reflects an inappropriate level of funding by Congress of this program. This authorization is not required for the Administration to develop and undertake a fleet management plan.

Long-term contracts (3 years or more) for vessel services allow the owner of the vessel to reduce lease costs over short-term contracts, since the owner's risk is lower and recovery of his capital expenditures may be spread over several years. Long-term charters or lease/purchase arrangements may be one option which NOAA can use to its advantage to meet vessel support needs. Multi-year funding and multi-year contract authority for vessel services would be required before NOAA could implement this option.

6. **What types of ships would NOAA acquire if Congress did provide the agency long-term lease/purchase authority?**

NOAA would implement a trial lease/purchase arrangement for a vessel capable of performing bathymetric surveys of the Exclusive Economic Zone (EEZ).

7. **How would enactment of H.R. 896, allowing NOAA to use the contract provisions of the Walsh-Healey Act, save the agency time and money? What consequences would there be for shipyard employees working on NOAA ship repair contracts?**

NOAA's shipyard repair contracts currently fall under the Davis-Bacon Act, which requires the Department of Labor (DOL) to establish prevailing wage rates determinations for shipyard personnel in the area of the contract's performance. No such determinations currently exist, since shipyard functions are significantly different from other industrial construction and production activities. DOL determination of wage rates is an extra, unnecessary step in the contract process which takes additional time and may result in delayed contract start dates. NOAA expenditures for vessel operations continue if the contract start is delayed. Additional administrative costs are also incurred for contracts covered by Davis-Bacon, since additional contract monitoring and auditing efforts are necessary. Most shipyards that work on NOAA vessels also work on Navy contracts, which are already covered by Walsh-Healey. There would be no consequences to shipyard employees other than equity of pay for the same job on Navy and NOAA ships.

8. **Concerning NOAA's arrangements to use SWATH-type vessels, I understand you have signed an agreement with the Navy to use the KAIMALINO, a 15-year old SWATH vessel owned by MSC. What are the terms of that agreement, and where does the money come from?**

The Navy has agreed to allow NOAA to use the KAIMALINO for operational support of NOAA programs in Hawaiian waters. The cost of the agreement is $250K per year which includes all operating costs, and will be funded from the NOAA Administrator's Fund. The agreement will allow NOAA to use the vessel for 50 operating days each year the agreement is in effect.

What arrangement has NOAA made with the Canadian Hydrographic Survey to lease a new SWATH ocean vessel? What are the terms of that arrangement, and where does the money come from?

Informal discussions have been held with the Canadian Hydrographic Service concerning a possible joint trial lease of a SWATH vessel. No formal arrangements or funding commitments have been made.

9. **Has NOAA undertaken any further study of the need to charter ships in response to the Marine Board's Study and recommendations? If not, why not? What does NOAA think of the Marine Board's recommendations that NOAA could charter ships to perform bathymetric surveying and some fisheries research?**

NOAA has not undertaken additional study of chartering for vessel services.

The Marine Board's recommendations did not include a need for additional study, however, they did suggest that NOAA enter into an experimental contract for bathymetric surveys of the EEZ. It is NOAA's position, in agreement with the Marine Board's recommendations, that long-term contract authority would be required to make chartering a viable option for providing vessel services. NOAA generally agrees with the Marine Board recommendation that bathymetric surveys could be conducted under a long-term contract arrangement; however, the Marine Board concluded that the issue is still an uncertain one and that NOAA should proceed slowly and cautiously to implement such charters. Some specialized short-term fisheries projects are already being conducted under charter in the Pacific Northwest and Alaska areas. However, the Marine Board recognized that the success of these operations is due largely to the uniqueness of the Pacific Northwest charter market, which is not duplicated in the other areas where NOAA conducts fisheries research.

10. **How does NOAA respond to the GAO's preliminary findings that its ships and equipment are not adequate to meet the needs of their users?**

NOAA has not seen GAO's preliminary findings; therefore, NOAA cannot comment on them.

What plans does NOAA have to upgrade the scientific equipment on its ships?

A working group was established several years ago for fleet instrumentation. The group is composed of headquarters representatives for the vessel users and the ship operators. The group was established to ensure that instrumentation needs are met.

11. **What study has NOAA done of its future fleet requirements? Do you see these requirements expanding or shrinking? If expanding, how do you plan to meet the agency's future requirements?**

Each year through the budget process NOAA's fleet requirements are studied and adequate resources are provided to meet NOAA's at-sea requirements.

12. **I understand you have recently undergone a reorganization for management of the fleet. Please explain the reorganization and what effect it is likely to have on upgrading the NOAA fleet?**

The reorganization of management for NOAA's platforms involves consolidating, under one NOAA staff office, the resources to operate NOAA's ships and aircraft, including the NOAA Commissioned Officer Corps. The Director of the new Office of NOAA Corps Operations reports directly to the Under Secretary for Oceans and Atmosphere and has responsibility for managing the Commissioned Personnel Center, the Atlantic Marine Center, the Pacific Marine Center, and the Aircraft Operations Center. The reorganization moved the NOAA Fleet from the National Ocean Service, a NOAA line office, and placed it at a more visible location to compete for resources in the NOAA management structure; therefore the effect on future fleet modernization decisions is a positive one.

13. **To what do you attribute the serious repair problems this year of the MALCOLM BALDRIGE? Would you say it's time to think about replacing this ship?**

The MALCOLM BALDRIGE has required a significant level of repair work this year including reduction gear repair, shaft alignment, oceanographic winch replacement, upgrade of oily water system to meet new standards, replacement of wasted steam generator return lines, replacement of navigation lights to meet new standards, replacement of wasted piping in the shaft alley, replacement of all the ducting in the engine room, replacement of anchor chain, and replacement of pumps and foundations. This level of repair is attributable to the 20-year age of the vessel and the deferral of major maintenance from prior years. Replacement of the MALCOLM BALDRIGE is not necessary at this time.

14. **Is it possible for NOAA to undertake joint research projects with Navy oceanographic ships? With ships in the UNOLS fleet? Does NOAA have unique ship requirements? If so, what are they?**

NOAA does undertake joint projects with Navy ships and UNOLS ships. NOAA also supports ancillary and piggyback projects to ensure maximum utilization of sea time and data collection capabilities. NOAA's ship requirements are different than those of the other Federal Fleet operators since NOAA's missions are different. For example, NOAA is the only Federal operator of ships engaged in fisheries research requiring industry compatible fishing gear and techniques.

15. **How do you respond to the conclusion of the Ad Tech Study that some of the ships may have a fire safety problem? Do you foresee any safety problems if the recommendations of that study are not adopted?**

Advanced Technology recognized that some of NOAA's ships are equipped with out-of-date fire detection systems and extinguishing equipment; however, the task team did not indicate a current fire safety problem. Although these systems are operable, they do not represent modern fire detection and extinguishing technology. NOAA does not view this as a current safety problem; however, systems are being replaced as rapidly as resources and schedules allow.

ANSWERS TO QUESTIONS SUBMITTED BY CONGRESSMAN ROBERT W. DAVIS FOR THE RECORD OF THE HEARING BEFORE THE SUBCOMMITTEE ON OCEANOGRAPHY AND GREAT LAKES ON THE NOAA FLEET, APRIL 27, 1989

1. **NOAA, as well as the Maritime Administration, provides vessel loan guarantees under Title XI of the Merchant Marine Act of 1936. As a result of the many defaults under this program, the government now has title to many vessels. Has NOAA explored the possibility of obtaining any of these vessels for its use?**

   Converting existing vessels such as those available under the MARAD program is an option; however, most of these vessels would require major conversion and outfitting to meet NOAA program requirements. NOAA is presently investigating the use of a converted 163-foot offshore supply ship for fisheries research missions. The vessel is available because of loan default under the MARAD Title XI loan guarantee program. NOAA will review the conversion option, along with the other options available as part of its fleet review and analysis.

2. **Please describe the consultation, if any, which occurs between NOAA scientists or other personnel which determine program research needs, and the individuals who plan the NOAA ship schedules and who make the decisions to repair or obtain new scientific equipment?**

Utilization plans for NOAA ships are developed by a fleet working group which consists of representatives of all NOAA users. The Fleet Allocation Council, composed of the NOAA Line Office Directors and chaired by the NOAA Deputy Administrator, reviews and approves the annual ship utilization plan as well as all plans for modernization and new instrumentation. Plans for platform needs that incorporate the rapidly developing multiagency coordination of research initiatives are being focused by the Office of the Chief Scientist of NOAA. Information concerning scientific requirements for equipment aboard NOAA ships is passed to the appropriate line office director through the laboratory directors and also may be passed through the marine centers by direct communication between the scientists and marine center personnel. A separate working group was established several years ago for fleet instrumentation. The group is composed of headquarters representatives of the vessel users and the ship operators and was established to ensure that instrumentation needs are updated.

3. How many non-NOAA scientific missions are conducted aboard NOAA vessels?

NOAA vessels are used by scientists from academia and other government agencies on piggyback or ancillary project basis. These projects usually complement the primary project the vessel is undertaking.

4. As an alternative to modernizing the NOAA fleet, would you consider transferring responsibility for the fleet to another operational agency, such as the Coast Guard? I have introduced a bill, H.R. 1340, to reorganize and consolidate the maritime programs, including certain portions of NOAA, within the Department of Transportation. Please provide me with your comments on this bill as it affects NOAA.

Transferring the responsibility for the NOAA Fleet to another agency does not change the requirements for the vessels. The Coast Guard vessel mission is entirely different from NOAA's mission in that the Coast Guard is primarily oriented toward safety and enforcement and secondarily with research. NOAA ships, on the other hand, conduct mission-applied research and surveying operations. The close interaction between NOAA scientists and vessel officers and crew has been extremely beneficial for NOAA's programs and would be hampered, if not lost, if the fleet were transferred to another agency. We are therefore against a transfer.

5. **Presently, part of the Title XI loan guarantee program is administered by NOAA and part by the Maritime Administration. Wouldn't this program be more effective if it were administered entirely by the Maritime Administration?**

No, the expertise for the NOAA Title XI program lies within NOAA and DOC.

6. **Would NOAA be in favor of having the responsibility for running a fleet of icebreaking vessels for oceanographic research if that responsibility is transferred from the Coast Guard to NOAA?**

NOAA believes that the operation of the icebreaking fleet is appropriately located in the Coast Guard. Transferring an operational program to a science-oriented agency like NOAA would be very inefficient and would also result in competition for resources thereby diluting NOAA's scientific effectiveness. Therefore, the Department of Commerce and NOAA would oppose this transfer.

7. **In your testimony, you stated that you needed additional language in the vessel chartering section of H.R. 897 to increase your flexibility in making chartering arrangements. Do you believe these chartering arrangements can be made**

cost-effectively? Do you see a problem in mixing civilian and uniformed crews to gain the maximum in cost effectiveness and operation efficiency?

NOAA believes that multiyear contract authority could allow vessel operators to offer charter vessels to NOAA at a more competitive cost than one year charters. Civilian and commissioned officer crews have been mixed without problems on NOAA vessels since the formation of the Commissioned Corps in 1917. The blend of the vessel management, ship operation skills, and scientific capability of the officers, coupled with the extensive experience and background of the ships' crews, have resulted in what NOAA believes to be an effective and efficient operating vessel complement.

ANSWERS TO QUESTIONS SUBMITTED BY CONGRESSMAN H. JAMES SAXTON FOR THE RECORD OF THE HEARING BEFORE THE SUBCOMMITTEE ON OCEANOGRAPHY AND GREAT LAKES ON THE NOAA FLEET, APRIL 27, 1989

1. Could you elaborate in more detail on the nature and extent of NOAA fleet support for the following of NOAA's programs: fisheries research, marine environmental baseline assessment, resource assessment, and surveys of porpoises taken incidental to purse seine tuna fishery operations? (details such as which ships, ship time, personnel, etc.)

The National Marine Fisheries Service's programs focus in two general areas: managing and conserving living marine resources within 200 miles of U.S. shores which are of concern to the Nation; and helping to maintain a healthy U.S. fishing industry which is competitive in world markets. Nine of NOAA's vessels are devoted exclusively to fisheries research. Three others are involved part of the time. Approximately 2000 days at sea are spent each year in stock assessment of groundfish, pelagic fish, mollusks and crustaceans on the Atlantic and Pacific coasts and the Gulf of Mexico. The vessels involved in these assessments include: MILLER FREEMAN, TOWNSEND CROMWELL, DAVID STARR JORDAN, JOHN N. COBB, MURRE II, OREGON II, ALBATROSS IV, DELAWARE II, AND CHAPMAN. During the last four years, the MCARTHUR and DAVID STARR JORDAN have spent approximately 255 days at sea each year on porpoise surveys in the Eastern Tropical Pacific. In FY 1989, the SURVEYOR spent 112 days at sea in the Antarctic conducting krill and other living marine resource assessments.

The Office of Oceanography and Marine Assessment within the National Ocean Service, has been using approximately 200 days at sea in order to assess the status and long-term changes in environmental quality such as the health of fish and the concentrations of important chemical parameters indicative of pollution in the nation's coastal and estuarine environments. The vessels conducting these assessments have been the MCARTHUR and FERREL.

2. **How will NOAA's proposed plans effect the support of these programs?**

In FY 90, the following vessels will be inactive: OCEANOGRAPHER, FAIRWEATHER, MCARTHUR, DAVIDSON, JOHN N. COBB, MURRE II, PEIRCE, OREGON II, and ALBATROSS IV. The vessel deactivations were based on the mix of ships and days at sea needed to meet NOAA's program requirements. Days at sea will be reduced for the missions indicated in Question 1.

3. **How will the proposed plans affect the fleet support for NOAA's ocean dumping monitoring and research activities?**

   Days at sea in support of ocean dumping monitoring and research will be reduced but an appropriate level of activity will be undertaken.

4. **What effect will the proposed laying up of half (5) of the fisheries research ships have on this program?**

   The highest priority research initiatives will still be conducted.

RESPONSES TO QUESTIONS SUBMITTED BY THE SUBCOMMITTEE ON OCEANOGRAPHY TO REAR ADMIRAL RICHARD F. PITTENGER

Question. Why did the Navy decide to replace virtually all of its oceanographic vessels rather than simply upgrading them?

Answer. The Navy is in the midst of a full spectrum oceanographic ship modernization program. Current actions and budget proposals include both ship upgrades and replacements. For example, the AGOR 14 (R/V *Melville*) and AGOR 15. (R/V *Knorr*) will be undergoing extensive upgrading. Those ships which are being replaced are obsolete, both in terms of technical capabilities and service life. The two deep ocean survey ships funded in the FY85 SCN Program replace two World War II-vintage converted cargo ships. Similarly, the oceanographic ship in the FY87 SCN Program and the T-AGS(O) ships in the FY90 and 91 SCN Program replace aged ships of the AGOR 3 class. The six AGOR 3 class ships, designed in the late 1950's, are technologically inadequate for multimission oceanographic operations and have exceeded their expected service lives (ESL) of 25-years. The inherent mission limitations include lack of precise stationkeeping and equipment towing capabilities, limited working deck and equipment storage areas, insufficient reserve stability for carrying heavy deck loads and handling large over-the-side instrument systems, inadequate laboratory space, and restrictive endurance capability.

Question. Would the Navy's policy to replace obsolete vessels apply to other oceanographic fleets, such as NOAA's?

Answer. The Navy's policy decision to modernize its oceanographic ships was driven by expanding Navy mission requirements for precise oceanographic and hydrographic information.

Vessel obsolescence is based not only on effective service life, but perhaps most importantly, on the technical capability of the ship to meet present and projected mission requirements. The Navy cannot speak for other federal agency oceanographic fleets, such as NOAA. Each agency must ascertain its own mission requirements and relate those requirements to ship capabilities.

Question. What is the cost to the Navy of replacing its oceanographic fleet? Are the new ships purchased outright? Leased? Multi-year contract? If the latter, under what authority?

Answer. The estimated total acquisition costs for the planned construction of 13 oceanographic ships is approximately $700 million. This amount covers funds appropriated since FY85, proposed for FY90/91 budget consideration and planned in FY92 through FY94. To date the new ships have been procured within the Navy ship construction (SCN) appropriations.

Question. How many of the 21 ships for the expanded Navy oceanographic fleet are already in the pipeline?

Answer. Of 13 ships included in our acquisition and replacement plan, 5 ships are currently in various stages of construction and 3 ships are included in the President's budget. The five ships under construction include two new Deep Ocean survey ships (SCN FY85) which will replace World War II vintage ships. One of these ships, the USNS *Maury*, was delivered to Navy on 31 March 1989 and will commence fleet operations in August 1989. The other vessel, the USNS *Tanner*, is scheduled to be delivered in April 1990. Two Coastal Survey ships (SCN FY87) are also under construction and are scheduled for delivery to Navy in early 1990. These vessels have been named the USNS *McDonnell* and the USNS *Littlehales*. The fifth ship (SCN FY87; designated AGOR 23) is the first new research ship in 16-years and will replace the former R/V *Thompson*. Upon delivery of AGOR 23 in the Fall of 1990, it will be assigned to the Chief of Navy Research and operated by the University of Washington.

Question. As the new chairman of the Interagency Federal Oceanographic Fleet Coordination Council, what plans do you have for examining NOAA's ship requirements? Do you have any initial thoughts or recommendations on what should be done with the NOAA fleet?

Answer. By June 1989 the interagency working group of the Federal Oceanographic Fleet Coordination Council (FOFCC) will begin a study to develop the mission requirements, ship capabilities, and fleet size and mix for the Federal oceanographic fleet which includes NOAA and the other agencies which operate or procure oceanographic ships. The basic objective is to determine the adequacy of the present and planned federal oceanographic fleet to meet agency mission requirements. The FOFCC is working toward completion of the study in October 1989. At this time we are not in a position to make recommendations concerning the NOAA fleet.

Question. What criteria does the Navy use for acquiring new ships for the UNOLS fleet? What plans does the Navy have to implement the UNOLS fleet replacement plan? How does the Navy coordinate these decisions with the National Science Foundation?

Answer. The Navy's goal is to ensure that the academic community has a capability to conduct deep ocean oceanographic operations in support of Navy research requirements. The University-National Oceanographic Laboratory System (UNOLS) is a private group and, as such, its recommendations are advisory in nature. The Navy and the National Science Foundation work closely, especially through the Federal Oceanographic Fleet Coordination Council, in reviewing and coordinating the UNOLS recommendations with respective agency plans.

Question. Are there opportunities for the Navy and NOAA to cooperate in the acquisition of new oceanographic vessels? If so, in what areas? If not, why not? How do we avoid unnecessary duplication in the two fleets?

Answer. Although Navy and NOAA have separate and distinct oceanographic missions there are opportunities to cooperate in the acquisition of new oceanographic vessels. NOAA ships vary in length from approximately 90 feet to 300 feet and their missions range from fisheries to survey; however, Navy's design and construction experience may be particularly valuable to NOAA in those cases where NOAA's mission is similar to Navy and NOAA requires sizable vessel length (200–300 feet). There is not currently a duplication of fleets; our separate missions, our close relationship with NOAA, and the oversight by federal councils and committees will continue to insure that fleet duplication does not occur.

Question. Why does the Navy need its own coastal hydrographic survey ships? Why can't the Navy rely on NOAA surveys?

Answer. It may surprise you that almost 75 percent of the world's coastline is inadequately charted to support Navy missions. Navy defense missions require surveys to support mine warfare, amphibious warfare and other coastal operations. Navy ships are equipped to conduct surveys to meet the stringent DOD requirements, they are capable of operating worldwide, and they have the endurance to remain at sea for extended periods. Navy cannot rely on NOAA ships to conduct these surveys because it is our understanding that NOAA already has survey requirements within U.S. waters which exceed the NOAA fleet capability. Additionally, the NOAA ships may not be capable of operating in distant, remote areas nor equipped to meet the DOD needs to operate in support of and alongside combat forces.

Question. Why has the Navy decided to defer acquiring SWATH ships? What advantages and disadvantages do you foresee from the use of SWATH ships? What missions will the Navy carry out on SWATH ships:

Answer. The Navy had originally planned to fund for an oceanographic SWATH ship in FY89. It was decided, however, to defer this ship until SWATH technology had more fully matured and acquisition costs could be more precisely estimated. With the higher confidence level now being placed in SWATH technology, we expect the one considerable advantage to be gained is the ability to be able to conduct oceanographic operations in a Sea State 6 and above environment. This will be especially important to Navy in expanding our ability to meet critical oceanographic requirements across the full range of ocean environments where high sea states are common. A SWATH ship may impose certain constraints because of its deeper draft and wider beam, as compared to a comparable monohull. Also, the particular hull characteristics of the SWATH may necessitate new learning procedures of working "over-the-side." At this point, access in all seasons to forward areas for all oceanographic and hydrographic tasks warrants procurement of a SWATH ship as soon as practical within the planned program.

Question. What arrangements does the Navy have for sharing its oceanographic data with NOAA and the scientific community?

Answer. A significant portion of the oceanographic data collected by Navy is provided to NOAA's National Oceanographic Data Center (NODC) where it is merged with other data sources. The NODC, as a national repository, responds to data requests from both the National and international oceanographic community. Should NOAA or individual researchers dsire to access unusual or specific data sets collected by Navy, the arrangement exists wherein these requests can be dealt with on a case by case basis within existing security guidelines.

Question. Does the Navy rely on oceanographic data acquired by foreign countries? Have there been any difficulties in obtaining access to such data?

Answer. Yes, we do use foreign data, where appropriate, to augment our data; however, we do not rely on foreign data. Also, because of the high degree of accuracy required by Navy, the Navy is willing to place full reliability in data acquired only by certain allied countries. Additionally, where Navy is a joint participant in foreign data collection, such as through the Navy-to-Navy Hydrographic Cooperation (HYCOOP) Program, high reliance can be placed in the data.

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